INSIDE FRONT COVER CAT C

Thomas Cook Airlines

A320-214

77,000kg / 64,500kg
APPR CAT - C

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AIRBUS

A320 Flight Simulator

MSN 1954

Thomas Cook Airlines

QUICK REFERENCE HANDBOOK

AIRBUS S.A.S
CUSTOMER SERVICE DIRECTORATE
31707 BLAGNAC CEDEX
FRANCE

REFERENCE: TCX-SIM A320 Flight Simulator QRH

ISSUE DATE: 06-Nov-17

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Section	Title	Ref	Reason
PLP-FC	Inside Front Cover	H1	Deleted DU invariant (20800002)
OPS-OPS	Aircraft Configuration Summary Header	H2	Table amended.
OPS-OPS	Variant	H3	New information
OPS-OPS	Brake FANS	H4	New information
OPS-OPS	NWS Yellow HYD + ABCU	H5	New information
OPS-OPS	Multiscan WXR	H6	New information
OEBPROC-48	Abnormal V Alpha Prot	H7	New information
		H8	New information
OEBPROC-54	Incorrect FAC Weight due to Dashed CG on FUEL PRED page - Approval	H9	New information
OEBPROC-54	Incorrect FAC Weight due to Dashed CG on FUEL PRED page - Procedure	H10	New information

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IMPORTANT

SCOPE

The QRH contains some specific procedures which are not displayed on the ECAM.
As a general rule, the procedures displayed on the ECAM are not provided in the QRH (refer to FCOM PRO/ABN).

TASKSHARING FOR ABN/EMER PROC

For all abnormal/emergency procedures, the tasksharing is as follows :

- PF - Pilot flying - Responsible for the :
  - Thrust levers
  - Flight path and airspeed control
  - Aircraft configuration (request configuration change)
  - Navigation
  - Communications
- PM - Pilot Monitoring - Responsible for the :
  - Monitoring and reading aloud the ECAM and checklists
  - Performing required actions or actions requested by the PF, if applicable
  - Using engine master levers, cockpit C/Bs, IR and guarded switches with PF's confirmation (except on ground).

ECAM CLEAR

DO NOT CLEAR ECAM WITHOUT CROSS-CONFIRMATION OF BOTH PILOTS.

ABN/EMER PROC INITIATION

Procedures are initiated on pilot flying command.

No action will be taken (apart from audio warning cancel through MASTER WARN light) until :

- The appropriate flight path is established, and
- The aircraft is at least 400 ft above the runway, if a failure occurs during takeoff, approach, or go-around. (In some emergency cases, provided the appropriate flight path is established, the pilot flying may initiate actions before this height).

The flight crew can stop the procedure if the conditions for the application of the QRH procedure disappear.

NORMAL CHECKLIST

Normal C/L are initiated by the PF and read by the PM.
The PF shall respond after having checked the existing configuration. When both pilots have to respond, "BOTH" is indicated.

DEFINITIONS OF WARNINGS, CAUTIONS AND NOTES

The following are the official definitions of warnings, cautions and notes taken directly from the JAR25/CS-25 and applicable to Airbus flight operation documentation:

WARNING	An operating procedure, technique, etc. that may result in personal injury or loss of life if not followed.
CAUTION	An operating procedure, technique, etc. that may result in damage to equipment if not followed.
NOTE	An operating procedure, technique, etc. considered essential to emphasize. Information contained in notes may also be safety related.

GENERAL INFORMATION

QRH REVISION DATE

The update of the FCOM does not necessarily result in the update of the QRH. Therefore, the revision dates of the QRH and of the FCOM may differ.

EFFECTIVITY

As QRH is published at aircraft level, each paper page has only one effectivity.

PAGE NUMBERING

The page numbering follows the following rules:

01A, 02A, 02B,..	:	Numbering and Index (A, B, ...) for GEN, ABN, OPS, OEB PROC sections

Note: For these sections, the procedures start with the index A and for long procedures (more than one page), the index continues with B, C...

1/10, 3/5, ...	:	Numbering for NP, PER
C1, C2	:	Back cover page interior
C3	:	Back cover page exterior
"BLANK"	:	Index of an intentionally left blank paper page created to ensure the correct format of the next chapter (begins on recto page)

PRELIMINARY PAGES WITHIN THE QRH BINDER

It is essential for Airlines to correctly manage the updates of the QRH. For this purpose, Airbus publishes Preliminary Pages (PLP) with each QRH revision. These PLP are used as reference documents for Airlines to manage the QRH updates, e.g. easily insert the revisions, identify the modifications that impact the QRH, get a synthesis of changes introduced with each revision. However, when the QRH revisions have been incorporated in accordance with the information given in the PLP, these pages do not bring operational added value and therefore are no longer useful in the QRH binder for any operational purposes. Therefore, to minimize the size of the QRH binder on board the aircraft and to optimize the operational use of the QRH, Airbus has no objection that the Airlines remove the PLP from the QRH after the revisions have been incorporated in the QRH and all checks performed to confirm the revisions have been correctly incorporated. You will find below the list of PLP that may be removed from the QRH binder :

- The transmittal letter
- The List of Effective Preliminary Pages (LEPP)
- The Filing Instructions (FI)
- The List of Effective Documentary Units (the LESS is the reference)
- The List Of Modifications (LOM)
- The Summary Of Highlights (SOH)
- The front pages of all QRH sections
- The Table Of Contents (TOC) of the General section
- The OEB General Description page 99.01A.

ABN-27 SMOKE

ABN-28 WHEEL

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ECAM ADVISORY CONDITIONS

SYSTEM	CONDITIONS	RECOMMENDED ACTION
APU	EGT > EGT MAX -33 °C (inhibited during APU start)	
	OIL QTY (message LOW OIL LEVEL pulsing)	If there is no oil leak, then the remaining oil quantity allows normal APU operation for about 10 h.
CAB PR	CAB VERTICAL SPEED V/S > 1 800 ft/min	CPC changeover is recommended: MODE SEL: MAN Wait 10 s then: MODE SEL: AUTO
	CAB ALTITUDE altitude ≥ 8 800 ft	PACK FLOW: HI MODE SEL: MAN Manual pressure control
	ΔP ≥ 1.5 PSI in phase 7	LDG ELEV : ADJUST If unsuccessful: MODE SEL: MAN Manual pressure control
ELEC	IDG OIL TEMP ≥ 147 °C	Reduce IDG load, if possible (GALLEY or GEN OFF). If required, restore when the temperature has dropped. Restrict generator use to a short time, if the temperature rises again excessively.
ENG	OIL PRESS P < 16 PSI	- If oil pressure is between 16 PSI and 13 PSI (advisory), continue normal operation. - If oil pressure is below 13 PSI (red indication), without the ENG OIL LO PR warning, continue normal engine operation (it can be assumed that the oil pressure transducer is faulty). In both cases, monitor other engine parameters, especially oil temperature and quantity.
	OIL PRESS P > 90 PSI	Closely monitor other engine parameters for symptoms of engine malfunction. If high oil pressure is not accompanied by other abnormal indications, operate the engine normally for the remainder of the flight. Record high oil pressure, and corresponding N2 readings, for maintenance action.
	OIL TEMP T > 140 °C	An oil temperature increase during normal steady-state operations indicates a system malfunction, and should be closely monitored for other symptoms of engine malfunction. *Note: If the OIL TEMP increase follows thrust reduction, increasing thrust may reduce oil temperature.* *In addition, an oil temperature increase could be related to the IDG oil cooling system. To reduce oil temperature increases before limits are reached, the following is recommended:* 1. *Low Speed- Increase engine speed to increase fuel flow, and thereby cool IDG oil.* 2. *High Speed- Reduce generator load, or turn off generator. If oil temperature continues to rise, mechanically disconnect IDG.*
	OIL QTY < 3 qt	If oil quantity is low at a high power setting, expect level increase after power reduction. Monitor affected engine oil parameters and crosscheck with other engine - If pressure and temperature remain normal, continue normal operation.
	NAC TEMP ≥ 240 °C	Monitor engine parameters and crosscheck with other engine.
	VIBRATION N1 ≥ 6 units N2 ≥ 4.3 units	Refer to HIGH ENGINE VIBRATION procedure (*Refer to ABN-19 HIGH ENGINE VIBRATION*).

Continued on the next page

ECAM ADVISORY CONDITIONS (CONT'D)

SYSTEM	CONDITIONS	RECOMMENDED ACTION
FUEL	Difference between wing fuel quantities greater than 1 500 kg (3 307 lb)	FUEL MANAGEMENT (CHECK) If a fuel leak is suspected, *Refer to ABN-21 Fuel Leak*
	Fuel temp greater than 45 °C in inner cell, or 55 °C in outer cell	GALLEY (OFF)
	Fuel temp lower than -40 °C in inner or outer cell	Consider descending to a lower altitude and/or increasing Mach to increase TAT.
OXY	OXY Amber when pressure is < 400 PSI.	If mask is not being used, check if it is correctly stowed.

SYSTEM RESET - GENERAL

WARNING	Only perform one reset at a time, unless indicated differently.

Guidelines to reset a system:
- Set the related normal cockpit control to OFF, or pull the corresponding circuit breaker,
- Wait 3 s if a normal cockpit control is used, or 5 s if a circuit breaker is used (unless a different time is indicated),
- Set the related normal cockpit control to ON, or push the corresponding circuit breaker,
- Wait 3 s for the end of the reset.

■ **On ground:**

Reset ECU (CFM) or EEC (IAE) or EIU only when engine shut down.
Reset BSCU only when aircraft stopped.
Systems not listed in the System Reset Table can be reset following the guidelines described above.
Refer to System Reset Table

■ **In flight:**

WARNING	The flight crew can attempt a system reset only when: - An ECAM/OEB/FCOM/QRH procedure requests to reset the system, or - The System Reset Table permits.

CAUTION	Do not pull the following circuit breakers: - SFCC - ECU or EEC or EIU.

Note: *Before taking any action on the cockpit C/Bs, both the PF and PM must crosscheck and ensure that the C/B label corresponds to the affected system.*

Refer to System Reset Table

SYSTEM RESET TABLE

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
AIR	AIR ENG 1(2) BLEED FAULT or AIR ENG 1(2) BLEED ABNORM PR (Engine Bleed Supply System)	*Note:* *Do not attempt more than one reset.* **On ground or in flight:** **If the PACK (non-affected side) is operative, and If the Wing Anti-Ice is OFF:** - Set ENG BLEED pb-sw (affected side) to OFF ■ **If ENG BLEED pb-sw FAULT light (affected side) is on:** - Delay application of the reset until FAULT light extinguishes. ■ **If ENG BLEED pb-sw FAULT light (affected side) is off:** - Set X BLEED selector to AUTO - Set PACK pb-sw (affected side) to ON - Set ENG BLEED pb-sw (affected side) to ON - Check that the affected Engine Bleed Valve is open on the BLEED SD PAGE. • **If** AIR ENG (AFFECTED) BLEED FAULT **alert or** AIR ENG (AFFECTED) BLEED ABNORM PR **alert reoccur, or** **If Engine Bleed Valve (affected side) is not open on the** BLEED SD PAGE**:** - Set ENG BLEED pb-sw(affected side) to OFF - Set X BLEED selector to OPEN. *Note:* *Record the ENG BLEED reset in the logbook (successful or unsuccessful).*
	AIR ENG 1(2) BLEED NOT CLSD (Engine Bleed Supply System)	*Note:* *Do not attempt more than one reset.* **On ground only:** - Set ENG BLEED pb-sw (affected side) to OFF ■ **If ENG BLEED pb-sw FAULT light (affected side) is on:** - Delay application of the reset until FAULT light extinguishes. ■ **If ENG BLEED pb-sw FAULT light (affected side) is off:** - Set ENG BLEED pb-sw (affected side) to ON. - Check that the affected Engine Bleed Valve is closed on the BLEED SD PAGE. *Note:* *Record the ENG BLEED reset in the logbook (successful or unsuccessful).*

Continued on the next page

SYSTEM RESET TABLE (CONT'D)

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
AUTO FLT	AUTO FLT FCU 1(2) FAULT (FCU)	**In flight:** - Pull the C/B B05 on 49VU for FCU 1, or M21 on 121VU for FCU 2 - Push it after 5 s - Check the displayed targets and the barometer reference, and correct them if necessary. **On ground:** - Pull the C/B B05 on 49VU for FCU 1, or M21 on 121VU for FCU 2 - Push it after 5 s - If AUTO FLT FCU 1(2) FAULT disappears, check the displayed targets and barometer reference, and correct them if necessary (RESET successful) - If AUTO FLT FCU 1(2) FAULT remains, pull both C/Bs B05 on 49VU and M21 on 121VU - Push them after 7 min, with a delay of less than 5 s between side 1 and 2 - Wait at least 30 s for FCU 1 and FCU 2 safety tests completion - Check the displayed targets and barometer reference, and correct them if necessary (RESET successful).

Continued on the next page

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
AUTO FLT	AUTO FLT FCU 1+2 FAULT (FCU)	**In flight:** - Pull the C/B B05 on 49VU for FCU 1, and then M21 on 121VU for FCU 2 - Push them after 5 s - Check the displayed targets and the barometer reference, and correct them if necessary. **On ground:** - Pull the C/B B05 on 49VU for FCU 1, and then M21 on 121VU for FCU 2 - Push them after 5 s - If AUTO FLT FCU 1+2 FAULT disappears, check the displayed targets and barometer reference, and correct them if necessary (RESET successful) - If AUTO FLT FCU 1+2 FAULT remains, pull again both C/Bs B05 on 49VU and M21 on 121VU - Push them after 7 min, with a delay of less than 5 s between side 1 and 2 - Wait for at least 30 s for FCU 1 and FCU 2 safety tests completion - Check the displayed targets and barometer reference, and correct them if necessary (RESET successful). FCU targets are synchronized on current aircraft values, and displayed as selected targets. - Re-enter the barometer altimeter setting value, if necessary.
	AUTO FLT REAC W/S DET FAULT ◁ (FAC 1+2)	**On ground only:** The Flight Crew could cancel these alerts by resetting both FACs, one after the other - Pull the C/Bs B03 and B04 on 49VU and push them after 5 s - Pull the C/Bs M18 and M19 on 121VU and push them after 5 s.
	One MCDU locked, or blank (MCDU)	**On ground, or in fligth:** - Pull the C/B for the locked or blanck MCDU and push it back after 10 s. The circuit breakers for the MCDU's are: • AUTO FLT/MCDU 1 B1 ON 49VU (Overhead Panel) • AUTO FLT/MCDU 2 N20 ON 121VU (Right Rear Maintenance Panel) • AUTO FLT/MCDU 3 N21 ON 121VU (Right Rear Maintenance Panel) ◁ .
	Both MCDU locked, or blank, or FMGC malfunction (FMGC)	**On ground:** - Apply external power or APU generator power - Wait 2 min before resetting the FMGC circuit breakers - FD 1(2) OFF - Pull the C/B of the affected FMGC and reset it after 10 s. The circuit breakers for the FMGC's are: • AUTO FLT/FMGC 1 B2 ON 49VU (Overhead Panel) • AUTO FLT/FMGC 2 M17 ON 121VU (Right Rear Maintenance Panel). **CAUTION** Always wait 1 min after the "PLEASE WAIT" message disappears from the MCDU, before engaging or reengaging the FDs and the AP of the reset FMGC. *Note:* *Due to electrical transient, MANUAL FMGS RESET procedure may be unsuccessful. If so, the flight crew may attempt the same procedure with engines not running.* **In flight:** - FD 1(2) OFF - Pull the C/B of the affected FMGC and reset it after 10 s. The circuit breakers for the FMGC's are: • AUTO FLT/FMGC 1 B2 ON 49VU (Overhead Panel) • AUTO FLT/FMGC 2 M17 ON 121VU (Right Rear Maintenance Panel). **CAUTION** Always wait 1 min after the "PLEASE WAIT" message disappears from the MCDU, before engaging or reengaging the FDs and the AP of the reset FMGC.

Continued on the next page

SYSTEM RESET TABLE (CONT'D)

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
BRAKES	BRAKES SYS 1(2) FAULT or BRAKES BSCU CH 1(2) FAULT (BSCU)	**On ground:** - STOP aircraft - Set PARK BRK handle to ON - Confirm that towing bar is disconnected - Set A/SKID & N/W STRG sw to OFF - Set A/SKID & N/W STRG sw to ON. • IF UNSUCCESSFUL: - Pull C/Bs M33 and M34 on 121VU for BSCU channel 1 - Pull C/Bs M36 and M35 on 121VU for BSCU channel 2 - Push C/Bs. After a successful reset, resume to normal operation. *Note:* *After any BSCU reset:* *1. Check brake efficiency* *2. Record BSCU reset in the logbook.* **In flight:** When landing gear is up only: - Set A/SKID & N/W STRG sw to OFF - Set A/SKID & N/W STRG sw to ON - If required, rearm the autobrake. When landing gear is down: reset not authorized. *Note:* *After any BSCU reset:* - *Record BSCU reset in the logbook.*
COM	COM CIDS 1+2 FAULT (CIDS)	**On ground, or in flight:** - Pull the C/Bs in the following order: G02 on 49VU, M05 on 121VU - Wait 10 s, then - Push the C/B in the following order: M05, G02 - After CIDS reset, wait approximately 4 min, before recovering normal operation.
	Uncommanded EVAC horn activation (CIDS)	**On ground, or in flight:** Press the EVAC HORN SHUT OFF pb. Set the EVAC CAPT & PURS CAPT sw to the CAPT only position. Wait for 3 s. • IF UNSUCCESSFUL: - Pull the C/Bs in the following order: G02 on 49VU, M05 on 121VU - Wait for 1 min, then - Push the C/Bs in the following order: M05, G02 - After CIDS reset, wait approximately 4 min, before recovering normal operation.
	Frozen RMP (RPM)	**On ground, or in flight:** The flight crew must reset all the RMPs one after the other via the RMP control panel: - Set RMP ON/OFF sw to OFF position - Wait 5 s - Set RMP ON/OFF sw to ON position.
	FAP freezing (FAP or Tape reproducer PRAM)	**On ground, or in flight:** - Pull C/B M14 (or Q14 ◁) of the FAP in the 121VU - Wait 10 s before pushing the C/B. • IF UNSUCCESSFUL: - Pull the tape reproducer/PRAM C/B D01 or E01 or F07 on 2000VU (cabin) - Wait 10 s before pushing the C/B.
	Failure messages on the CIDS FAP in the cabin (VSC)	**On ground, or in flight:** - Pull C/B A06 or B06 on 2001VU, aft cabin - Wait 30 s, then push the C/B.

Continued on the next page

SYSTEM RESET TABLE (CONT'D)

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
DATALINK	ATSU malfunction (ATSU)	The ATSU reset should be attempted, only if: - "INVALID DATA" is displayed on the DCDU - Key selection has no effect on the DCDU or any of the MCDU ATSU DATALINK submenus - ADS-C or CPDLC are inoperative When the ATSU is reset, the following connections are no longer active: - CPDLC: • The flight crew should send a notification to the ATC center to re-establish the CPDLC connection - ADS-C: • As no ADS-C disconnect message is sent, the ATC center(s) assumes that the ADS-C connection is still alive • The flight crew must check that ADS-C is ARMED or ON. **On ground or in flight:** - Pull the C/Bs in the following order: L16, L15 on 121VU - Wait 5 s, then - Push the C/Bs in the following order: L15, L16.
ELEC	GPU cannot be connected to the aircraft (GAPCU)	**On ground only:** The GPU cannot be connected to the electrical network of the aircraft (AVAIL light is OFF): • If at least one power source (IDG 1 or 2, APU GEN or batteries) is connected to the electrical network of the aircraft: - Reset the EXT PWR pb on 35VU (Press and release). • If no power source is connected to the electrical network of the aircraft: - Set the BAT 1 pb-sw and BAT 2 pb-sw to AUTO.
ENG	ENG 1(2) FADEC A(B) FAULT (FADEC)	**On ground only:** If this alert triggers at engine start, apply the following procedure: - Set ENG MASTER (affected) pb-sw to OFF - Wait until N2 speed below 5 % - Pull C/B A04 or A05 on 49VU for ENG 1(2) FADEC channel A - Pull C/B R41 or Q40 on 121VU for ENG 1(2) FADEC channel B - Wait 5 s before pushing the C/Bs - After ECU power-up sequence, the Flight Crew can restart the engine.
F/CTL	F/CTL ELAC 1(2) FAULT (one or both computer failed) (ELAC)	**On ground, or in flight** - Set ELAC 1(2) pb to OFF - Wait 3 s - Set ELAC 1(2) pb to ON. **WARNING** Do not reset more than one computer at a time. **Note:** - *When an* ELAC *reset is performed on ground, the flight crew must check the pitch trim position.* - *If a reset is performed on ground, the flight crew must then perform a flight controls check.*
	ELAC or SEC malfunction (ELAC or SEC)	ELAC or SEC may be reset. **WARNING** Do not reset more than one computer at a time. - It is possible to reset the flight control computers in flight, even if not requested by the ECAM, provided only one reset is performed at a time. **Note:** - *When an* ELAC *reset is performed on ground, the flight crew must check the pitch trim position.* - *If a reset is performed on ground, the flight crew must then perform a flight controls check.*

Continued on the next page

SYSTEM RESET TABLE (CONT'D)

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
FUEL	Loss of fuel quantity indication or Simultaneous triggering of FUEL L OUTER XFR CLOSED and FUEL R OUTER XFR CLOSED although FUEL SD indicates no anomaly. (FQIC)	**On ground, or in flight:** - Pull the three C/Bs: • Channel 1 (A13 on 49VU) • Channel 2 (M27 on 121VU) • Channel 1 and 2 (L26 on 121VU). - Wait 5 s, before pushing the three C/Bs. *Note:* *The fuel quantity indication will be re-established within 1 min.*
FWS	FWS FWC 1(2) FAULT (FWC)	**On ground:** Pull, then push, the C/B of the affected FWC: - FWC 1 (F01 on 49VU) - FWC 2 (Q7 on 121VU). Wait 50 s after pushing the C/Bs. **In flight:** Pull, then push, the C/B of the affected FWC: - FWC 1 (F01 on 49VU) - FWC 2 (Q7 on 121VU).
L/G	L/G LGCIU 1(2) FAULT (LGCIU 1(2))	**On ground only:** The flight crew must depressurize the green hydraulic system before resetting the LGCIU: - ENG 1 PUMP OFF - PTU OFF. When there is no green hydraulic pressure: - To reset LGCIU 1: • Pull C/B Q34 on 121VU, then C09 on 49VU • Wait for 15 s, then push the C/Bs. - To reset LGCIU 2: • Pull C/B Q35 on 121VU • Wait for 15 s, then push the C/B. After the LGCIU reset, restore green hydraulic pressure (ENG 1 PUMP ON, PTU AUTO).
NAV	NAV GPWS FAULT and NAV GPWS TERR DET FAULT (EGPWS)	**On ground, or in flight:** Perform the following reset when both alerts are displayed at the same time: - Pull C/B P07 on 121VU - Set GPWS SYS pb and GPWS TERR pb to ON - Wait 5 s, then push the C/B.
	NAV TCAS FAULT (TCAS)	**On ground only:** - Pull C/B K10 on 121VU - Wait 5 s, then push the C/B.
SMOKE	SMOKE DET FAULT (SDCU)	**On ground only:** - Pull C/B C06 on 49VU, and C/B T18 on 122VU - Wait 10 s before pushing both C/Bs.
VENT	VENT AVNCS SYS FAULT (AEVC)	**On ground only:** - Pull C/B Y17 on 122VU - Wait 5 s before pushing the C/B.
WINDSHEAR	WINDSHEAR DET FAULT (FAC 1+2)	**On ground only:** The Flight Crew could cancel these alerts by resetting both FACs, one after the other - Pull the C/Bs B03 and B04 on 49VU and push them after 5 s - Pull the C/Bs M18 and M19 on 121VU and push them after 5 s.

Continued on the next page

SYSTEM RESET TABLE (CONT'D)

ECAM System	System malfunction or ECAM Alert (Affected System)	Reset Procedure
WHEEL	WHEEL N.W STEER FAULT or WHEEL N/W STRG FAULT (BSCU)	**On ground only:** **Case A** If the three conditions below are fulfilled: - the WHEEL N/W STRG FAULT alert was triggered just after engine start - the N/W STRG DISC memo was displayed before the start of the pushback (before the aircraft starts moving) - the N/W STRG DISC memo remained displayed even after the pushback is finished (nosewheel steering selector bypass pin is in the steering position). Apply the below reset procedure. If the ECAM alert disappears after the reset, the flight crew may continue the flight without troubleshooting. **Case B** In all other cases, including in case of doubt on the above conditions, troubleshooting must be performed before continuing the flight, even if the ECAM alert disappears after the reset. For a return to the gate : - Apply the below reset procedure - The taxi speed must not exceed 10 kt. **Reset Procedure:** - STOP aircraft - Set PARK BRK handle to ON - Confirm that towing bar is disconnected - Set A/SKID & N/W STRG sw to OFF - Set A/SKID & N/W STRG sw to ON. *Note:* *After any BSCU reset:* *1. Check brake efficiency* *2. Check absence of aircraft veering* *3. Record the BSCU reset in the logbook.*

DOUBLE AOA HEAT FAILURE

One of affected ADRs ..... OFF

Keep preferably ADR1 available as ADR1 is supplied in EMER ELEC config.

NAV ADR 1(2)(3) FAULT

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ENGINE 1+2 BLEED FAULT

● **At ANY TIME of the procedure, if** CAB PR EXCESS CAB ALT **alert triggers:**
APPLY ECAM PROC

■ **If** AIR ENG 1 BLEED FAULT **alert or** AIR ENG 1 BLEED ABNORM PR **alert**
and
If AIR ENG 2 BLEED FAULT **alert or** AIR ENG 2 BLEED ABNORM PR **alert:**
X BLEED ..... SHUT
ENG 1 BLEED ..... OFF THEN ON
ENG 2 BLEED ..... OFF THEN ON

● **If reset unsuccessful (NO engine bleed recovered):**
DESCENT TO FL 100 / MEA-MORA ..... INITIATE
ENG 1 BLEED ..... OFF
ENG 2 BLEED ..... OFF
APU BLEED ..... OFF
APU ..... START
WING A.ICE ..... OFF
AVOID ICING CONDITIONS

■ **If APU available:**

● **When at or below FL 200:**
KEEP WING A.ICE OFF
APU BLEED ..... ON

■ **If APU bleed available:**
MAX FL: 200
ENG 1 BLEED ..... ON
ENG 2 BLEED ..... ON
APU BLEED ..... OFF

● **If no engine bleed recovered:**
APU BLEED ..... ON
ENG 1 BLEED ..... OFF
ENG 2 BLEED ..... OFF

WING A.ICE NOT AVAILABLE

● **If PACK 1 inoperative:**
X BLEED ..... OPEN

■ **If APU bleed not available:**
CONTINUE DESCENT TO FL 100 / MEA-MORA
APU BLEED ..... OFF

● **When at or below FL 100 / MEA-MORA:**
ENG 1 BLEED ..... ON
ENG 2 BLEED ..... ON

● **If no engine bleed recovered:**
ENG 1 BLEED ..... OFF

Continued on the next page

ENGINE 1+2 BLEED FAULT (CONT'D)

ENG 2 BLEED ..... OFF

WING A.ICE NOT AVAILABLE

- **When CAB PR ΔP < 1 psi:**
  RAM AIR ..... ON
  MAX FL: 100 / MEA-MORA

■ **If APU not available:**
CONTINUE DESCENT TO FL 100 / MEA-MORA
APU BLEED ..... OFF

- **When at or below FL 100 / MEA-MORA:**
  ENG 1 BLEED ..... ON
  ENG 2 BLEED ..... ON
  - **If no engine bleed recovered:**
    ENG 1 BLEED ..... OFF
    ENG 2 BLEED ..... OFF

    WING A.ICE NOT AVAILABLE

    - **When CAB PR ΔP < 1 psi:**
      RAM AIR ..... ON
      MAX FL: 100 / MEA-MORA

■ **If at least one engine bleed failed due to bleed leak or engine fire or Start Air Valve failed open:**
DESCENT TO FL 100 / MEA-MORA ..... INITIATE
X BLEED ..... SHUT
ENG 1 BLEED ..... OFF
ENG 2 BLEED ..... OFF
APU BLEED ..... OFF
APU ..... START
WING A.ICE ..... OFF
AVOID ICING CONDITIONS

■ **If** AIR ENG 2 BLEED FAULT **alert or** AIR ENG 2 BLEED ABNORM PR **alert:**

- **When at or below FL 100 / MEA-MORA:**
  ENG 2 BLEED ..... ON
  - **If engine 2 bleed not recovered:**
    ENG 2 BLEED ..... OFF

    WING A.ICE NOT AVAILABLE

    - **When CAB PR ΔP < 1 psi:**
      RAM AIR ..... ON
      MAX FL: 100 / MEA-MORA

Continued on the next page

ENGINE 1+2 BLEED FAULT (CONT'D)

■ **If** AIR ENG 1 BLEED FAULT **alert or** AIR ENG 1 BLEED ABNORM PR **alert:**

■ **If APU available:**

● **When at or below FL 200:**
KEEP WING A.ICE OFF
APU BLEED ..... ON

■ **If APU bleed available:**
MAX FL: 200
ENG 1 BLEED ..... ON
APU BLEED ..... OFF

● **If engine 1 bleed not recovered:**
APU BLEED ..... ON
ENG 1 BLEED ..... OFF
WING A.ICE NOT AVAILABLE

■ **If APU bleed not available:**
CONTINUE DESCENT TO FL 100 / MEA-MORA
APU BLEED ..... OFF

● **When at or below FL 100 / MEA-MORA:**
ENG 1 BLEED ..... ON

● **If engine 1 bleed not recovered:**
ENG 1 BLEED ..... OFF
WING A.ICE NOT AVAILABLE

● **When CAB PR ΔP < 1 psi:**
RAM AIR ..... ON
MAX FL: 100 / MEA-MORA

■ **If APU not available:**
CONTINUE DESCENT TO FL 100 / MEA-MORA
APU BLEED ..... OFF

● **When at or below FL 100 / MEA-MORA:**
ENG 1 BLEED ..... ON

● **If engine 1 bleed not recovered:**
ENG 1 BLEED ..... OFF
WING A.ICE NOT AVAILABLE

● **When CAB PR ΔP < 1 psi:**
RAM AIR ..... ON
MAX FL: 100 / MEA-MORA

■ **If neither** AIR ENG 1(2) BLEED FAULT **alert nor** AIR ENG 1(2) BLEED ABNORM PR **alert on any side:**

NO ENGINE BLEED CAN BE RECOVERED
WING A.ICE NOT AVAILABLE

Continued on the next page

ENGINE 1+2 BLEED FAULT (CONT'D)

- **When at or below FL 100 / MEA-MORA**
  and
  CAB PR ΔP < 1 psi:
  RAM AIR.....ON
  MAX FL: 100 / MEA-MORA

RESIDUAL BRAKING

- **In flight:**
  BRAKE PEDALS .....PRESS SEVERAL TIMES
  - **If residual pressure remains:**
    A/SKID & N/W STRG sel..... KEEP ON
    - **For landing:**
      AUTO/BRK..... MED
      - **If autobrake not available:**
        APPLY BRAKING JUST AFTER TOUCHDOWN

POSSIBLE BRAKING ASYMMETRY

Note: *If tire damage is suspected after landing, refer to FCOM-LIM-LG Landing Gear-Taxi with Deflated or damaged Tires.*

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CABIN OVERPRESSURE

PACK 1 OR 2 ..... OFF
VENTILATION BLOWER ..... OVRD
VENTILATION EXTRACT ..... OVRD
ΔP ..... FREQUENTLY MONITOR

- **If ΔP >9 PSI:**

  LAND ASAP

  PACK 1 ..... OFF
  PACK 2 ..... OFF

- **10 min before landing:**

  PACK 1 ..... OFF
  PACK 2 ..... OFF
  VENTILATION BLOWER ..... AUTO
  VENTILATION EXTRACT ..... AUTO

- **Before door opening:**

  CHECK ΔP ZERO

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COCKPIT DOOR FAULT

CKPT DOOR CONT [OVHD PANEL] ..... CHECK

- **If one or more STRIKE status lights on:**

  COCKPIT DOOR ..... OPEN

  COCKPIT DOOR sw ..... UNLOCK 10 s THEN NORM

  - **If two or more STRIKE status lights on:**

    COCKPIT DOOR NOT INTRUSION PROOF.

- **If two CHAN status lights on:**

  AUTOMATIC LATCH RELEASE NOT AVAILABLE AFTER COCKPIT DECOMPRESSION.

- **If no status light on:**

  TO UNLOCK THE DOOR: COCKPIT DOOR HANDLE AVAIL

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DISPLAY UNIT FAILURE

■ **If DU flashes:**

■ **If captain PFD, ND, Upper ECAM or MCDU 1 affected:**

GEN 1 ..... OFF

■ **If DUs flash continues:**

GEN 1 ..... ON

■ **If DUs flash stops:**

KEEP GEN 1 OFF

RUD TRIM ..... CHECK/RESET

Use the slide slip indication to reset the rudder trim if necessary.

APU START ..... CONSIDER

■ **If first officer PFD, ND, lower ECAM or MCDU 2 affected:**

GEN 2 ..... OFF

■ **If DUs flash continues:**

GEN 2 ..... ON

■ **If DUs flash stops:**

KEEP GEN 2 OFF

RUD TRIM ..... CHECK/RESET

Use the slide slip indication to reset the rudder trim if necessary.

APU START ..... CONSIDER

■ **If DU blank or display distorted:**

DU brightness knob (affected DU) ..... AS RQRD

CONSIDER ECAM/ND XFR

CONSIDER PFD/ND XFR

■ **If diagonal line on affected DU:**

CONSIDER EIS DMC SWITCHING

● **If unsuccessful:**

DU brightness knob (affected DU) ..... OFF THEN ON

Note: Reduce ND range, or deselect WPT or CSTR, and the ND display may automatically recover, after about 30 s.

■ **If inversion of E/WD and SD:**

ECAM UPPER DISPLAY brightness knob ..... OFF THEN ON

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ELEC EMER CONFIG SUMMARY

CRUISE

MAX SPD : 320 kt
ALTN LAW: PROT LOST
ONLY CAPT PITOT AND AOA HEATED
FUEL: CTR TK UNUSABLE.
FUEL GRAVITY FEEDING
COM: VHF1, HF1 , ATC1, RMP1, only
NAV: ILS1, VOR1, GPS1 (if MMR is installed) only
For **Landing Performance** assessment, use the QRH/PER chapter or the performance application.

APPROACH

CAT 2 INOP
MINIMUM RAT SPEED 140 KT
SLATS / FLAPS SLOW
FOR LANDING : USE FLAP 3

- **When L/G down:** USE MAN PITCH TRIM (DIRECT LAW)

LANDING

FLARE: Only 2 spoilers per wing. Direct law
SPOILERS: Only 2 per wing
NO REVERSER
BRAKING: ALTERNATE without antiskid
MAX BRK PR : 1 000 PSI
NO NOSEWHEEL STEERING

GO-AROUND

- **When L/G uplocked:**
  ALTN LAW: PROT LOST

ELEC EMER CONFIG SYS REMAINING

ELEC EMER CONFIG SYS REMAINING		EMER GEN RUNNING	BAT ONLY	
			IN FLIGHT	ON THE GROUND
ICE - RAIN	WING A.ICE	Norm	Inop	Inop
	ENG A. ICE VALVE	Open	Open	Open
	CAPT PITOT	Norm	Norm	Norm(1)
	CAPT AOA	Norm	Inop	Inop
	RAIN REPELLENT (CAPT)	Norm	Norm	Norm

(1) *Lost, when speed is below 50 kt.*

PNEU	ENG 1 BLEED	Norm	BMC 1 inop	BMC 1 inop
	ENG 2 BLEED	BMC 2 inop	BMC 2 inop	BMC 2 inop
	APU BLEED	Inop	Inop	Inop(1)
	X BLEED (MAN CTL)	Norm	Inop	Inop

(1) *Restored, when speed is below 100 kt.*

Continued on the next page

ELEC EMER CONFIG SYS REMAINING (CONT'D)

ELEC EMER CONFIG SYS REMAINING		EMER GEN RUNNING	BAT ONLY	
			IN FLIGHT	ON THE GROUND
APU	ECB - STARTER	Norm(1)	Norm(2)	Inop(3)
	FUEL LP VALVE	Norm	Norm	Norm
	FUEL PUMP	Norm	Norm	Norm

(1) *For APU start only.*
(2) *Not available for 45 s, after the loss of both engine generators.*
(3) *Restored, when speed is below 100 kt.*

FMGS	FMGC (NAV FUNCTION)	N° 1 only	Inop	Inop
	MCDU	N° 1 only	Inop	Inop
	FAC	N° 1 only	Inop	Inop
	FCU	ch 1 only	ch 1 only	ch 1 only
AIR COND PRESS	PRESS AUTO SYS 1	Norm	Norm	Norm
	MAN PRESS CTL	Inop	Inop	Inop(1)
	RAM AIR	Norm	Norm	Norm
	PACK VALVE 1	Norm	Closure Inop	Closure Inop
	PACK VALVE 2	Closure Inop	Closure Inop	Closure Inop(1)
	AVIONIC VENT	Norm	Norm	Partial

(1) *Restored, when speed is below 100 kt.*

COM	VHF 1	Norm	Norm	Norm
	HF1	Norm	Inop	Inop
	RMP 1	Norm	Norm	Norm
	ACP (Capt, F/O)	Norm	Norm	Norm
	CIDS	Norm	Norm	Norm
	INTERPHONE	Norm	Norm	Norm
	CVR	Norm	Inop	Inop
	LOUDSPEAKER 1	Norm	Norm	Norm
EIS	PFD 1	Norm	Norm	Norm(1)
	ND 1	Norm	Inop	Inop
	ECAM upper disp.	Norm	Norm	Norm(1)
	DMC 1 or 3	Norm	Norm	Norm(1)
	SDAC 1, FWC 1	Norm	Norm	Norm(1)
	ECAM CONT. panel	Norm	Norm	Norm
FLT INS	CLOCKS	Norm	Norm	Norm

(1) *Lost, when speed is below 50 kt.*

EMER EQPT	CREW OXY	Norm	Norm(1)	Norm(1)
	PAX OXY mask release (auto + man)	Norm	Inop	Inop
	SLIDES ARM/WARN	Norm	Norm	Norm

(1) *Crew oxygen valve inoperative.*

PWR PLT	FADEC	A + B(1)	A + B(1)	A + B(1)
	IGNITION	A only	A only	A only
	HP FUEL VALVE closure	Norm	Norm	Norm

(1) *Channels A and B are self-powered above 12 % N2. If N2 is below 12 % , only Channel A is powered.*

FLT CTL	ELAC	N° 1 only	N° 1+ N° 2	N°1+ N°2(2)
	SEC	N° 1 only	N° 1	N° 1(2)
	FCDC	N° 1 only	Inop	Inop
	SFCC	N° 1 only	N° 1 only	N° 1 only
	Flaps POS ind	Norm	Norm	Norm(1)

(1) *Lost, when speed is below 50 kt.*
(2) *Lost 30 s after last engine shutdown.*

Continued on the next page

ELEC EMER CONFIG SYS REMAINING (CONT'D)

ELEC EMER CONFIG SYS REMAINING		EMER GEN RUNNING	BAT ONLY	
			IN FLIGHT	ON THE GROUND
FIRE	ENG 1 LOOP	A only	A only	A only
	ENG 2 LOOP	B only	B only	B only
	APU LOOP	Inop	Inop	Inop(1)
	CARGO SMOKE DET	Channel 1	Inop	Inop
	ENG FIRE EXT.	Bottle 1 only	Bottle 1 only	Bottle 1 only
	APU FIRE EXT.	Squib A only	Squib A only	Squib A only
	CARGO FIRE EXT.	Inop	Inop	Inop(1)
	APU AUTO EXT.	Inop	Inop	Inop(1)

(1) *Restored, when speed is below 100 kt.*

FUEL	LP VALVE	Norm	Norm	Norm
	FQI channel 1	Norm	Inop	Inop
	X FEED VALVE	Norm	Inop	Inop
	INTERTANK TRANSFER VALVE	Norm	Inop	Inop
HYD	FIRE VALVES	Norm	Norm	Norm
L/G	LGCIU SYS 1	Norm	Norm	Norm
	BRK PRESS IND	Norm	Norm	Norm
	PARK BRK	Norm	Norm	Norm
LIGHTS	EMER CKPT	Norm	Norm	Norm
	EMER CAB	Norm	Norm	Norm
MISC	MECH HORN	Norm	Norm	Norm
NAV	IR	N° 1 only(2)	N° 1 only(2)	N° 1 only(2)
	ADR	N° 1 only	N° 1 only	N° 1 only
	ADF	N° 1 only	Inop	Inop
	VOR	N° 1 only	N° 1 only	N° 1 only(1)
	MMR	N° 1 only	N° 1 only	N° 1 only(1)
	DME	N° 1 only	Inop	Inop
	DDRMI	Norm	Norm	Norm(1)
	ATC	N° 1 only	Inop	Inop
	STBY HORIZON	Norm	Norm	Norm
	STBY COMP (LT)	Norm	Norm	Norm
	STBY ALTI (VIB)	Norm	Inop	Inop

(1) *Lost, when speed is below 50 kt.*
(2) *IR2 and IR3 are lost 5 min after failure of the main generators. But, if IR3 replaces IR1 (ATT-HDG selector at CAPT3), IR3 remains supplied*

C/B TRIPPED

■ **On ground:**
Do not reengage the circuit breaker (C/B) of the fuel pump(s) of any tank. For all other C/B, if the flight crew coordinates the action with maintenance, the flight crew may reengage a tripped C/B, provided that the cause is identified.

■ **In flight:**
Do not reengage a circuit breaker (C/B), unless the captain judges it necessary to do so for the safe continuation of the flight. Only one reengagement should be attempted.

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ENG DUAL FAILURE - FUEL REMAINING

LAND ASAP

EMER ELEC PWR MAN ON pb ..... PRESS
THR LEVERS ..... IDLE
FAC 1 ..... OFF THEN ON
ENG MODE sel ..... IGN
OPTIMUM RELIGHT SPD ..... 300 KT

PITCH TARGET In case of speed indication failure:	
Gross Weight	**Pitch (°)**
At or below 50 000 kg/110 000 lb	-4.5
60 000 kg/132 000 lb	-3.5
70 000 kg/154 000 lb	-2.5

AVERAGE GLIDING DISTANCE: 2 NM / 1000 FT (300kt NO WIND)

DETERMINE LANDING STRATEGY
VHF1/HF1 /ATC1 ..... USE
ATC ..... NOTIFY

- **If no relight after 30 s:**
  ENG MASTERS ..... OFF 30 S / ON
  Unassisted start attempts can be repeated until successful, or until APU bleed is available.

- **If unsuccessful:**
  CREW OXY MASKS (above FL 100) ..... ON
  - **When below FL 250:**
    APU (IF AVAIL) ..... START
  - **When below FL 200:**
    WING ANTI ICE ..... OFF
    APU BLEED ..... ON
    ENG MASTERS (one at a time) ..... OFF 30 S / ON
    Between each attempt to relight the same engine, wait at least 30 s with the associated ENG MASTER lever set to OFF.

- **When APU bleed is available or if engine restart is definitively considered impossible:**

GREEN DOT SPEED WITH ALL ENGINES INOPERATIVE (KNOTS)			
Gross Weight (1 000 kg)	**At or below FL 200**	**FL 300**	**FL 400**
78	241	251	261
76	237	247	257
72	229	239	249
68	221	231	241
64	213	223	233
60	205	215	225
56	197	207	217
52	189	199	209
48	181	191	201
44	173	183	193
40	165	175	185

AVERAGE GLIDING DISTANCE: 2.5NM / 1000 FT (NO WIND)
AVERAGE RATE OF DESCENT: 1600 FT/MIN

Continued on the next page

ENG DUAL FAILURE - FUEL REMAINING (CONT'D)

PREPARE CABIN AND COCKPIT

SIGNS.....ON

COMMERCIAL.....OFF

USE RUDDER WITH CARE

- **When below FL 150:**

  RAM AIR.....ON

BARO REF.....SET

CREW MASKS/OXY SUPPLY (below FL 100).....OFF

ELT (when conditions permit).....ON

- **If forced landing anticipated:**

AVERAGE GLIDING DISTANCE 1.2NM / 1000FT (CONF3, L/G DOWN, NO WIND)

- **For approach:**

  FOR LANDING : USE FLAP 3

  SLATS AVAIL ONLY

  MIN APPR SPEED : 150 kt

  VAPP.....DETERMINE

Gross Weight (1 000 kg)	40	44	48	52	56	60	64	68	72	76	78
Vapp	150	150	150	150	150	155	159	163	167	171	173

  - **At a suitable altitude (not below 3 000 ft AGL):**
    - **When in CONF 3 and VAPP:**

      GRAVITY GEAR EXTN handcrank.....PULL AND TURN

      FLT CTL DIRECT LAW
      MAN PITCH TRIM NOT AVAILABLE

    - **When L/G downlocked**

      L/G lever.....DOWN

      APPROACH SPEED.....ADJUST

      ADJUST SPEED TO REACH LANDING FIELD

      MAX SPEED : 200 kt

      SPLRs.....ARM

      MAX BRK PR : 1 000 PSI

  - **At 2 000 ft AGL:**

    CABIN CREW.....NOTIFY FOR LANDING

  - **At 500 ft AGL:**

    BRACE FOR IMPACT.....ORDER

  - **At touchdown:**

    ENG MASTERS.....OFF

    APU MASTER SW.....OFF

    BRAKES ON ACCU ONLY

Continued on the next page

ENG DUAL FAILURE - FUEL REMAINING (CONT'D)

- **When aircraft stopped:**

PARKING BRK ..... ON
ATC ..... NOTIFY
FIRE pb (ENGs & APU) ..... PUSH
AGENT (ENGs & APU) ..... DISCH

- **If evacuation required:**

EVACUATION ..... INITIATE
ELT ..... CHECK EMITTING
If not, switch on the transmitter.

- **If evacuation not required:**

CABIN CREW and PASSENGERS (PA) ..... NOTIFY

- **If ditching anticipated:**
  - **For approach:**

FOR LANDING : USE FLAP 3

SLATS AVAIL ONLY

MIN APPR SPEED : 150 kt

VAPP ..... DETERMINE

Gross Weight (1 000 kg)	40	44	48	52	56	60	64	68	72	76	78
Vapp	150	150	150	150	150	155	159	163	167	171	173

  - **At a suitable altitude (not below 3 000 ft AGL):**

KEEP LANDING GEAR UP

FOR FLARE: TARGET PITCH 11 ° & MIN V/S

Note: Prefer ditching parallel to the swell. If that causes a strong crosswind, ditch into the wind.

  - **At 2 000 ft AGL:**

CABIN CREW ..... NOTIFY FOR DITCHING
DITCHING pb ..... ON

  - **At 500 ft AGL:**

BRACE FOR IMPACT ..... ORDER

  - **At touchdown:**

ENG MASTERS ..... OFF
APU MASTER SW ..... OFF

  - **After ditching:**

ATC (VHF 1) ..... NOTIFY
FIRE pb (ENGs & APU) ..... PUSH
AGENT (ENGs & APU) ..... DISCH
EVACUATION ..... INITIATE
ELT ..... CHECK EMITTING
If not, switch on the transmitter.

ENG DUAL FAILURE - NO FUEL REMAINING

EMER ELEC POWER MAN ON pb ..... PRESS
THRUST LEVERS ..... IDLE
FAC 1 ..... OFF THEN ON
OPTIMUM SPEED ..... 220 kt / GREEN DOT

Initially, fly 220 kt, because the PFD may not display the correct green dot speed. Then fly the green dot speed according to the following table:

GREEN DOT SPEED WITH ALL ENGINES INOPERATIVE (KNOTS)			
Gross Weight (1 000 kg)	**At or below FL 200**	**FL 300**	**FL 400**
68	221	231	241
64	213	223	233
60	205	215	225
56	197	207	217
52	189	199	209
48	181	191	201
44	173	183	193
40	165	175	185

AVERAGE GLIDING DISTANCE: 2.5 NM / 1000 FT (GREEN DOT NO WIND)
AVERAGE RATE OF DESCENT: 1600 FT/MIN

DETERMINE LANDING STRATEGY
VHF1/HF1 ⋖ /ATC1 ..... USE
ATC ..... NOTIFY
CREW OXY MASKS (above FL 100) ..... ON
PREPARE CABIN AND COCKPIT
SIGNS ..... ON
COMMERCIAL ..... OFF
USE RUDDER WITH CARE

- **When below FL 150:**
  RAM AIR ..... ON

BARO REF ..... SET
CREW MASKS/OXY SUPPLY (below FL 100) ..... OFF
ELT ⋖ (when conditions permit) ..... ON

- **If forced landing anticipated:**

  AVERAGE GLIDING DISTANCE 1.2NM / 1000FT (CONF3, L/G DOWN, NO WIND)

  - **For approach:**
    FOR LANDING : USE FLAP 3

    SLATS AVAIL ONLY

    MIN APPR SPEED : 150 kt

    VAPP ..... DETERMINE

Gross Weight (1 000 kg)	40	44	48	52	56	60	64	68	72	76	78
Vapp	150	150	150	150	150	155	159	163	167	171	173

Continued on the next page

ENG DUAL FAILURE - NO FUEL REMAINING (CONT'D)

- **At a suitable altitude (not below 3 000 ft AGL):**
  - **When in CONF 3 and VAPP**
    GRAVITY GEAR EXTN handcrank.....PULL AND TURN

    FLT CTL DIRECT LAW
    MAN PITCH TRIM NOT AVAILABLE
  - **When L/G downlocked**
    L/G lever.....DOWN
    APPROACH SPEED..... ADJUST
    ADJUST SPEED TO REACH LANDING FIELD
    MAX SPEED : 200 kt
    SPLRs..... ARM
    MAX BRK PR : 1 000 PSI
- **At 2 000 ft AGL:**
  CABIN CREW .....NOTIFY FOR LANDING
- **At 500 ft AGL:**
  BRACE FOR IMPACT ..... ORDER
- **At touchdown:**
  ENG MASTERS ..... OFF
  BRAKES ON ACCU ONLY
- **When aircraft stopped:**
  PARKING BRK.....ON
  ATC ..... NOTIFY
  - **If evacuation required :**
    EVACUATION.....INITIATE
    ELT ✲ .....CHECK EMITTING
    If not, switch on the transmitter
  - **If evacuation not required :**
    CABIN CREW and PASSENGERS (PA) ..... NOTIFY

- **If ditching anticipated:**
  - **For approach:**
    FOR LANDING : USE FLAP 3
    SLATS AVAIL ONLY
    MIN APPR SPEED : 150 kt
    VAPP..... DETERMINE

Gross Weight (1 000 kg)	40	44	48	52	56	60	64	68	72	76	78
Vapp	150	150	150	150	150	155	159	163	167	171	173

  - **At a suitable altitude (not below 3 000 ft AGL):**
    KEEP LANDING GEAR UP
    FOR FLARE: TARGET PITCH 11 ° & MIN V/S

    Note: *Prefer ditching parallel to the swell. If that causes a strong crosswind, ditch into the wind.*

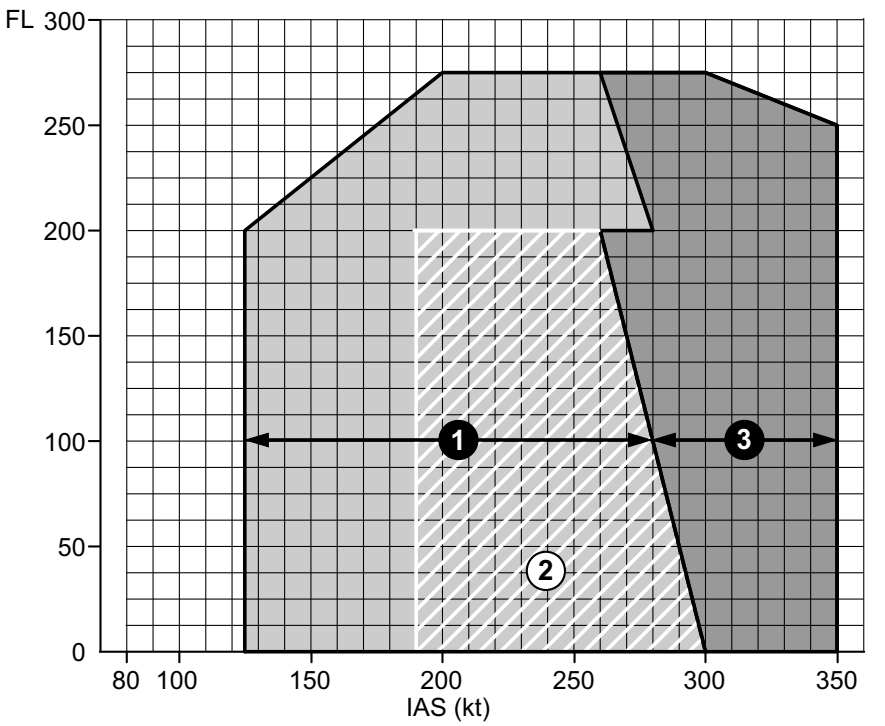
Continued on the next page

ENG DUAL FAILURE - NO FUEL REMAINING (CONT'D)

- **At 2 000 ft AGL:**
  CABIN CREW ..... NOTIFY FOR DITCHING
  DITCHING pb ..... ON
- **At 500 ft AGL:**
  BRACE FOR IMPACT ..... ORDER
- **At touchdown:**
  ENG MASTERS ..... OFF
- **After ditching:**
  ATC (VHF 1) ..... NOTIFY
  EVACUATION ..... INITIATE
  ELT ..... CHECK EMITTING
  If not, switch on the transmitter

ENG RELIGHT
IN FLIGHT

Engine Relight Envelope



1 STARTER ASSISTED RELIGHT
Above FL200 N2≤15%
Below FL200 N2≤12%

2 WINDMILL QUICK RELIGHT
if N2 > 12%

3 STABILIZED WINDMILL RELIGHT

ENG MASTER (affected engine) ..... OFF
THR LEVER (affected engine) ..... IDLE

Continued on the next page

ENG RELIGHT
IN FLIGHT (CONT'D)

ENG MODE sel ..... IGN
X BLEED ..... OPEN
WING ANTI-ICE (for starter assist) ..... OFF
ENG MASTER (affected engine) ..... ON
ENG PARAMETERS (N2, EGT) ..... MONITOR

Engine light up should be achieved within 30 s after fuel flow increases.

AUTOMATIC START ABORT NOT AVAIL

- **If ENG 1(2) START FAULT - ENG STALL triggers, and ENG parameters normal:**
  DISREGARD ECAM ALERT

- **When idle reached (ENG AVAIL) :**
  ENG MODE sel ..... NORM
  TCAS MODE sel ..... TA/RA
  X BLEED ..... AUTO
  Affected SYS ..... RESTORE

- **If no relight :**
  ENG MASTER (affected engine) ..... OFF

ENGINE STALL

■ **On ground :**
THR LEVER (affected engine) ..... IDLE
ENG MASTER (affected engine) ..... OFF

■ **In flight :**
THR LEVER (affected engine) ..... IDLE
ENG PARAMETERS (affected engine) ..... CHECK

■ **If abnormal ENG parameters:**
ENG MASTER (affected engine) ..... OFF

ASSOCIATED PROCEDURES

ENG 1(2) SHUT DOWN

■ **If normal ENG parameters:**
ENG ANTI-ICE (affected engine) ..... ON
WING ANTI-ICE ..... ON
THR LEVER (affected engine) ..... SLOWLY MOVE FORWARD

● **If stall recurs :**
THR LEVER (affected engine) ..... MOVE BACKWARD
Reduce thrust and operate below the thrust threshold where stall recurs.

● **If stall does not recur :**
CONTINUE NORMAL ENGINE OPERATION

ENGINE TAILPIPE FIRE

CAUTION	External fire agents can cause severe corrosive damage. Consider the use of external fire agents only if the following procedure does not stop engine tailpipe fire.

ENG MASTER (affected engine) ..... OFF
ENG MAN START pb (affected engine) ..... OFF
ESTABLISH AIR BLEED PRESS
BEACON ..... ON
ENG MODE sel ..... CRANK
ENG MAN START pb (affected engine) ..... ON

● **When fire stopped :**
ENG MAN START pb (affected engine) ..... OFF
ENG MODE sel ..... NORM

HIGH ENGINE VIBRATION

ENG PARAMETERS ..... CHECK

■ **If icing suspected:**

A/THR ..... OFF

THRUST (one engine at a time) ..... IDLE THEN INCREASE N1 > 80 %

Reduce thrust to idle if flight conditions permit.

*If ENG ANTI ICE is OFF, switch it ON **at idle fan speed,** one engine after the other with approximately 30 s interval.*

To shed ice, it may be necessary to perform several thrust variations between idle and a thrust compatible with the flight phase.

■ **If icing not suspected:**

● **If above vibration advisory and flight conditions permit:**

THRUST (affected engine) ..... REDUCE BELOW ADVISORY THRESHOLD

● **After landing, if vibrations continue :**

SHUT DOWN ENGINE WHEN POSSIBLE

ON GROUND - NON ENG SHUTDOWN AFTER ENG MASTER OFF

ECAM FUEL PAGE ..... SELECT

LP FUEL VALVE POSITION (affected engine) ..... CHECK

■ **If LP fuel valve closed (cross line amber):**

NO CREW ACTION

■ **If LP fuel valve open:**

ENG FIRE pb-sw (affected engine) ..... PRESS

GROUND STAFF ..... NOTIFY

IN BOTH CASES, ENGINE WILL SHUT DOWN AFTER A TIME DELAY UP TO 2 MIN 30 S

ONE ENGINE INOPERATIVE - CIRCLING APPROACH

MAXIMUM WEIGHT FOR CIRCLING IN CONF 3 WITH GEAR DOWN (1000 KG)								
OAT (°C)	AIRPORT ELEVATION (feet)							
	0	2 000	4 000	6 000	8 000	10 000	12 000	14 000
0	77.0	76.0	69.0	63.0	58.0	53.0	48.0	45.0
5	77.0	76.0	69.0	63.0	58.0	53.0	48.0	45.0
10	77.0	76.0	69.0	63.0	58.0	53.0	48.0	45.0
15	77.0	76.0	69.0	63.0	58.0	53.0	48.0	45.0
20	77.0	76.0	69.0	63.0	58.0	53.0	48.0	45.0
25	77.0	75.0	69.0	63.0	58.0	53.0	48.0	45.0
30	77.0	72.0	68.0	63.0	58.0	53.0	48.0	
35	74.0	70.0	66.0	63.0	56.0	51.0		
40	71.0	67.0	63.0	59.0				
45	69.0	65.0	61.0					
50	67.0	63.0						
55	64.0							

● **If aircraft weight above maximum weight for circling in CONF 3 with gear down:**

DELAY GEAR EXTENSION TO MAINTAIN LEVEL FLIGHT

FOR LANDING: USE FLAP 3

GPWS LDG FLAP 3.....ON

Note: - *If circling below 750 ft RA, the "L/G GEAR NOT DOWN" alert will trigger. The pilot can cancel the aural warning by pressing the EMER CANC pb.*

- *If the landing gear is not downlocked at 500 ft RA, GPWS "TOO LOW GEAR" aural alert will trigger.*

ONE ENGINE INOPERATIVE - STRAIGHT-IN APPROACH

■ **If NO level off expected during final approach:**

DELAY CONF FULL UNTIL ESTABLISHED ON FINAL DESCENT

■ **If level off expected during final approach:**

FOR LANDING: USE CONF 3

LANDING WITH SLATS OR FLAPS JAMMED

LDG DIST PROC ..... APPLY

Determine flap lever position for landing.

● **Repeat the following until landing configuration is reached:**

SPD SEL ..... VFE NEXT - 5 kt

AT VFE NEXT: SELECT FLAPS LEVER ONE STEP DOWN

Note:
- *OVERSPEED alert, and VLS displayed on the PFD, are computed according to the actual flaps/slats position*
- *VFE and VFE NEXT are displayed on the PFD according to the FLAPS lever position. If not displayed, use the placard speeds*
- *If VLS is greater than VFE NEXT (overweight landing case), the FLAPS lever can be set in the required next position, while the speed is reduced to follow VLS reduction as surfaces extend. The VFE warning threshold should not be triggered.*
  In this case, disconnect the A/THR. A/THR can be re-engaged when the landing configuration is established.

● **When in landing CONF and in final approach:**

DECELERATE TO CALCULATED VAPP

AP BELOW 500 ft AGL : DO NOT USE

● **For Go-around:**

<table>
<tr><th colspan="6">MAX SPEED</th></tr>
<tr><th>Flaps
Slats</th><th>F = 0</th><th>0 < F ≤ 1</th><th>1 < F ≤ 2</th><th>2 < F ≤ 3</th><th>F > 3</th></tr>
<tr><td>S = 0</td><td>NO LIMITATION</td><td rowspan="3">215 kt</td><td rowspan="3">200 kt</td><td rowspan="3">185 kt</td><td>177 kt
(Not allowed)</td></tr>
<tr><td>0 < S < 1</td><td rowspan="2">230 kt</td><td rowspan="2">177 kt</td></tr>
<tr><td>S = 1</td></tr>
<tr><td>1 < S ≤ 3</td><td colspan="2">200 kt</td><td>200 kt</td><td>185 kt</td><td>177 kt</td></tr>
<tr><td>S > 3</td><td colspan="2">177 kt</td><td>177 kt</td><td>177 kt</td><td>177 kt</td></tr>
</table>

■ **If SLATS FAULT:**

● **For circuit:**

MAINTAIN SLATS/FLAPS CONFIGURATION

Recommended speed: MAX SPEED - 10 kt

● **For diversion:**

SELECT CLEAN CONFIGURATION

Recommended speed for flaps retraction: between MAX SPEED - 10 kt and MAX SPEED

Recommended speed for diversion: MAX SPEED - 10 kt.

INCREASED FUEL CONSUMPTION

■ **If FLAPS FAULT:**

● **For circuit:**

MAINTAIN SLATS/FLAPS CONFIGURATION

Recommended speed: MAX SPEED - 10 kt

● **For diversion:**

■ **If FLAPS jammed at 0:**

SELECT CLEAN CONFIGURATION

Recommended speed for slats retraction: between MAX SPEED - 10 kt and MAX SPEED

Continued on the next page

LANDING WITH SLATS OR FLAPS JAMMED (CONT'D)

USE NORMAL OPERATING SPEEDS

■ **If FLAPS jammed > 0:**
MAINTAIN SLAT/FLAP CONFIGURATION
Recommended speed for diversion: MAX SPEED - 10 kt
INCREASED FUEL CONSUMPTION

CAUTION	For flight with SLATS or FLAPS extended, fuel consumption is increased. Refer to the fuel flow indication. As a guideline, determine the fuel consumption in clean configuration at the same altitude without airspeed limitation (e.g. From ALTERNATE FLIGHT PLANNING tables) and multiply this result by the applicable Fuel Penalty Factor provided in the QRH, to obtain the fuel penalty required to reach the destination in the current configuration. *Refer to OPS-OPS Fuel Penalty Factors/ECAM Alert Table*.

RUDDER JAM

● **For approach:**
AVOID LANDING WITH CROSSWIND FROM THE SIDE WHERE THE RUDDER IS DEFLECTED
MAX XWIND FOR LDG: 15 kt
AUTO BRK.....DO NOT USE
FOR LANDING ..... USE NORMAL CONF
SPEED AND TRAJECTORY .....STABILIZE ASAP
LDG DIST PROC .....APPLY

● **For landing:**
DIFFERENTIAL BRAKING ..... USE ASAP
REVERSER: SYMMETRIC USE ONLY
Use nosewheel steering handle below 70 kt.

STABILIZER JAM

AP .....OFF
MAN PITCH TRIM.....CHECK
The pitch trim wheel may not be fully jammed, the force needed may be higher than usual.

● **If MAN PITCH TRIM available:**
TRIM FOR NEUTRAL ELEV

● **If MAN PITCH TRIM not available:**
FOR LANDING: USE FLAP 3
GPWS LDG FLAP 3.....ON

CAT 1 ONLY

FUEL IMBALANCE

FOB ..... CHECK

CAUTION	A fuel imbalance may indicate a fuel leak. Do not apply this procedure, if a fuel leak is suspected. *Refer to ABN-21 Fuel Leak*

FUEL X FEED ..... ON

- **On lighter side and in center tank:**
  FUEL PUMPS ..... OFF
- **When fuel balanced:**
  FUEL PUMPS ..... ON
  FUEL X FEED ..... OFF

FUEL LEAK

LAND ASAP

■ **Leak from engine/pylon confirmed by excessive fuel flow or visual check:**
THR LEVER (affected engine) ..... IDLE
ENG MASTER (affected engine) ..... OFF
FUEL X FEED ..... AS RQRD
DO NOT RESTART AFFECTED ENGINE

■ **Leak from engine/pylon not confirmed or leak not located:**
FUEL X FEED ..... MAINTAIN CLOSED
CTR TK PUMP 1 ..... OFF
CTR TK PUMP 2 ..... OFF
INNER TANK FUEL QUANTITIES ..... MONITOR

■ **If one inner tank depletes faster than other by at least 300 kg (660 lb) in less than 30 min:**
THR LEVER (engine on leaking side) ..... IDLE
ENG MASTER (engine on leaking side) ..... OFF
CTR TK PUMP 1 ..... ON
CTR TK PUMP 2 ..... ON
FUEL LEAK ..... MONITOR

■ **If leak stops:**

ENGINE LEAK CONFIRMED

FUEL X FEED ..... AS RQRD
DO NOT RESTART AFFECTED ENGINE

■ **If leak continues (after engine shutdown):**

WING LEAK SUSPECTED

ENGINE RESTART ..... CONSIDER

CAUTION	Do not apply the FUEL IMBALANCE procedure. Approach and landing can be done, even with one full wing/one empty wing.

■ **If both inner tanks deplete at a similar rate:**

LEAK FROM CENTER TANK OR APU FEEDING LINE SUSPECTED

● **If fuel smell in cabin:**
APU ..... OFF

● **When fuel quantity in one inner tank less than 3 000 kg (6 600 lb):**
CTR TK PUMP 1 ..... ON
CTR TK PUMP 2 ..... ON

● **For landing:**
DO NOT USE REVERSERS

GRAVITY FUEL FEEDING

ENG MODE SEL ..... IGN

AVOID NEGATIVE G FACTOR

MAX FL: GRAVITY FEED CEILING

- *Current FL if flight time above FL 300 > 30 min.*
- *FL 300 if flight time above FL 300 < 30 min.*
- *Highest of FL 150 or 7 000 ft above takeoff airport if FL 300 never exceeded.*
- *FL 100 for JET B.*

● **When reaching gravity feed ceiling:**

FUEL X FEED..... OFF

● **If no fuel leak and with one engine running (fed by gravity):**

FUEL X FEED..... ON

BANK ANGLE..... 1 ° WING DOWN ON LIVE ENG SIDE

RUDDER TRIM..... USE

● **When fuel imbalance reaches 1 000 kg (2 200 lb):**

BANK ANGLE .....2 °or 3 ° WING DOWN ON LIVE ENG SIDE

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HYD B + Y SYS LO PR SUMMARY

CRUISE

MAX SPD : 320/0.77
MANEUVER WITH CARE
FLIGHT CONTROLS REMAIN IN NORMAL LAW
FUEL: Increased fuel consumption (*Refer to OPS-OPS Use of Fuel Penalty Factor Tables*)
For **Landing Performance** assessment, use the QRH/PER chapter or use EFB performance application.

APPROACH

CAT 2 INOP
SLATS SLOW/FLAPS SLOW

- **L/G gravity extension:**
  GRVTY GEAR EXTN handcrank ..... PULL AND TURN
  (Rotate the handle clockwise 3 turns until mechanical stop)
  L/G LEVER ..... DOWN
  GEAR DOWN indications ..... CHECK

LANDING

FLARE: Only one ELEV and two spoilers per wing
SPOILERS: Only 2 per wing
REVERSER: Only N°1
BRAKING: NORMAL
NO NOSEWHEEL STEERING

GO-AROUND

NO GEAR RETRACTION
FUEL: Increased fuel consumption (*Refer to OPS-OPS Use of Fuel Penalty Factor Tables*)

HYD G + B SYS LO PR SUMMARY

CRUISE

SPD BRK : DO NOT USE
MAX SPD : 320/0.77
MANEUVER WITH CARE
ALTN LAW: PROT LOST
FUEL: Increased fuel consumption (*Refer to OPS-OPS Use of Fuel Penalty Factor Tables*)
For **Landing Performance** assessment, use the QRH/PER chapter or use EFB performance application.

Continued on the next page

HYD G + B SYS LO PR SUMMARY (CONT'D)

APPROACH

CAT 2 INOP
SLATS JAMMED/FLAPS SLOW
ATHR.....OFF
FOR LANDING : USE FLAP 3
GPWS LDG FLAP 3.....ON

- **For Flaps extension:**
  SPD SEL..... VFE NEXT - 5 kt
- **When SPD 200 kt:**
  - **L/G gravity extension:**
    GRVTY GEAR EXTN handcrank ..... PULL AND TURN
    (Rotate the handle clockwise 3 turns until mechanical stop)
    L/G LEVER.....DOWN
    GEAR DOWN..... CHECK
- **When L/G down:** USE MAN PITCH TRIM
- **When in landing CONF and in final approach:** DECELERATE TO CALCULATED VAPP

LANDING

FLARE: Only one ELEV and two spoilers per wing. No ailerons.
A/C slightly sluggish – Direct law
SPOILERS: Only 2 per wing
REVERSER: Only N°2
BRAKING: ALTERNATE

GO-AROUND

NO GEAR RETRACTION
FUEL: Increased fuel consumption (*Refer to OPS-OPS Use of Fuel Penalty Factor Tables*)

- **For circuit:**
  MAINTAIN SLATS/FLAPS CONFIGURATION
  Recommended speed: MAX SPD - 10 kt
- **For diversion:**
  SELECT CLEAN CONFIGURATION
  - **If Slats jammed at zero:**
    Normal operating speeds (MAX SPEED = 250 kt)
  - **If Slats jammed above zero:**
    Recommended speed: MAX SPD - 10 kt

HYD G + Y SYS LO PR SUMMARY

CRUISE

MAX SPD : 320/0.77
MANEUVER WITH CARE
NO STABILIZER
ALTN LAW: PROT LOST
FUEL: Increased fuel consumption (*Refer to OPS-OPS Use of Fuel Penalty Factor Tables*)
For **Landing Performance** assessment, use the QRH/PER chapter or the performance application.

APPROACH

CAT 2 INOP
SLATS SLOW / FLAPS JAMMED
FOR LANDING : USE FLAP 3
GPWS FLAP MODE ..... OFF

- **For Flaps extension:**
  SPD SEL ..... VFE NEXT - 5 kt
- **When in CONF 3:**
  DECELERATE TO CALCULATED VAPP
- **When in CONF 3 and VAPP:**
  Stabilize at VAPP before L/G down, to be trimmed for approach.
  - **L/G gravity extension:**
    GRVTY GEAR EXTN handcrank ..... PULL AND TURN
    (Rotate the handle clockwise 3 turns until mechanical stop)
    L/G LEVER ..... DOWN
    GEAR DOWN ..... CHECK
    Disregard "USE MANUAL PITCH TRIM".
    MAN TRIM Unusable

LANDING

FLARE: PITCH AUTHORITY REDUCED (No stabilizer).
MAN TRIM Unusable
When Flaps jammed close to zero, consider tailstrike clearance.
Only 1 spoiler per wing – Direct law
SPOILERS: Only 1 per wing
NO REVERSER
BRAKING: BRK Y ACCU PR ONLY (7 applications)
MAX BRK PR : 1 000 PSI
NO NOSEWHEEL STEERING

Continued on the next page

HYD G + Y SYS LO PR SUMMARY (CONT'D)

GO-AROUND

NO GEAR RETRACTION

FUEL: Increased fuel consumption (*Refer to OPS-OPS Use of Fuel Penalty Factor Tables*)

- **For circuit:**
  MAINTAIN SLATS/FLAPS CONFIGURATION
  Maintain speed close to VAPP (due to pitch trim unusable)
- **For diversion:**
  - **If Flaps jammed at zero:**
    SELECT CLEAN CONFIGURATION
    Maintain at least the higher of VAPP or VLS (due to pitch trim unusable)
  - **If Flaps jammed above zero:**
    MAINTAIN SLATS/FLAPS CONFIGURATION
    Maintain speed close to VAPP (due to pitch trim unusable)

LANDING WITH ABNORMAL L/G

CAUTION	Do not apply this procedure if at least one green triangle is displayed on each landing gear on the WHEEL SD PAGE. This is sufficient to confirm that the landing gear is downlocked. Disregard any possible GPWS "TOO LOW GEAR" aural alert.

CABIN CREW ..... NOTIFY
ATC ..... NOTIFY
GALY & CAB ..... OFF

CONSIDER FUEL REDUCTION

- **If NOSE L/G abnormal:**
  SHIFT CG AFT IF POSSIBLE
  - *10 pax from front to rear moves the CG roughly 4 % aft.*
  - *10 pax from mid to rear moves the CG roughly 2.5 % aft.*

- **If one MAIN L/G abnormal:**
  FUEL DISTRIBUTION ..... CONSIDER
  Open the fuel X-FEED valve and switch off the pumps on the side with landing gear normally extended.

OXYGEN CREW SUPPLY ..... OFF
SIGNS ..... ON
CABIN AND COCKPIT (LOOSE EQPT) ..... SECURE

- **For approach:**
  GPWS SYS ..... OFF
  L/G lever ..... CHECK DOWN
  GRVTY GEAR EXTN handcrank ..... TURN BACK TO NORMAL
  DO NOT ARM AUTOBRAKE
  EMER EXIT LT ..... ON
  CABIN REPORT ..... OBTAIN
  A/SKID & N/W STRG ..... OFF
  MAX BRAKE PR : 1 000 PSI
  - **If one or both MAIN L/G abnormal:**
    DO NOT ARM GROUND SPOILERS

RAM AIR ..... ON
DOME LT ..... DIM

- **At 500 ft AGL:**
  BRACE FOR IMPACT ..... ORDER

- **At flare, touchdown and rollout:**
  DO NOT USE REVERSE
  - **If NOSE L/G abnormal:**
    KEEP NOSE UP
    After touchdown, keep the nose off the runway by use of the elevator. Then, lower the nose on to the runway before elevator control is lost.

Continued on the next page

LANDING WITH ABNORMAL L/G (CONT'D)

BRAKES ..... SMOOTHLY APPLY
BEFORE NOSE IMPACT : ALL ENG MASTERS OFF

- **If one MAIN L/G abnormal:**
  AT TOUCHDOWN : ALL ENG MASTERS OFF
  KEEP AFFECTED SIDE WING UP

- **If both MAIN L/G abnormal:**
  DURING FLARE : ALL ENG MASTERS OFF
  MIN PITCH ATT : 6 °

- **When aircraft stopped:**
  PARK BRK.....ON
  ALL FIRE pb (ENGs & APU)..... PUSH
  ALL AGENT (ENGs & APU) .....DISCH

  - **If evacuation required:**
    EVACUATION ..... INITIATE

  - **If evacuation not required:**
    CABIN CREW and PASSENGERS (PA).....NOTIFY
    Ensure that all the landing gears are secured before initiating the disembarkation (before switching OFF the seat belts signs).

L/G GRAVITY EXTENSION

CAUTION	Do not apply this procedure if at least one green triangle is displayed on each landing gear on the WHEEL SD PAGE. This is sufficient to confirm that the landing gear is downlocked. Disregard any possible GPWS "TOO LOW GEAR" aural alert.

GRAVITY GEAR EXTN handcrank.....PULL AND TURN
Rotate the handle clockwise 3 turns until reaching the mechanical stop, even if resistance is felt.
L/G lever.....DOWN
GEAR DOWN indications (if available) .....CHECK
The L/G LGCIU 2 FAULT or BRAKES SYS 1(2) FAULT alert may be spuriously triggered after a gravity extension.

- **If successful:**
  DO NOT RESET GRAVITY GEAR EXTN handcrank

- **If unsuccessful:**
  LDG WITH ABNORMAL L/G PROC .....APPLY

  Refer to ABN-24 Landing with Abnormal L/G.

DITCHING

ATC ..... NOTIFY

ATC XPDR 7700 ..... CONSIDER

PREPARE CABIN AND COCKPIT

- *Loose equipment secured,*
- *Survival equipment prepared,*
- *Belts and shoulder harness locked.*

GPWS SYS ..... OFF

GPWS TERR ..... OFF

SIGNS ..... ON

EMER EXIT LT ..... ON

COMMERCIAL ..... OFF

LDG ELEV ..... SELECT 00

BARO ..... SET

ELT (when conditions permit) ..... ON

● **For approach and ditching:**

KEEP LANDING GEAR UP

SLATS / FLAPS ..... MAX AVAIL

FOR FLARE: TARGET PITCH 11 ° & MIN V/S

Note: Prefer ditching parallel to the swell. If that causes a strong crosswind, ditch into the wind.

● **At 2 000 ft AGL:**

CAB PRESS MODE SEL ..... AUTO

ALL BLEEDS (ENGs & APU) ..... OFF

CABIN ..... NOTIFY FOR DITCHING

DITCHING pb ..... ON

● **At 500 ft AGL:**

BRACE FOR IMPACT ..... ORDER

● **At touchdown:**

ALL ENG MASTERS ..... OFF

APU MASTER SW ..... OFF

● **After ditching:**

ATC (VHF 1) ..... NOTIFY

ALL FIRE pb (ENGs & APU) ..... PUSH

ALL AGENTS (ENGs & APU) ..... DISCH

EVACUATION ..... INITIATE

ELT ..... CHECK EMITTING

If not, switch on the transmitter.

EMER DESCENT

CREW OXY MASKS ..... USE
SIGNS ..... ON
EMER DESCENT ..... INITIATE

● **If A/THR not active:**

THR LEVERS ..... IDLE

SPD BRK ..... FULL

● **When descent established:**

SPEED ..... MAX/APPROPRIATE

● **If structural damage suspected:**

MANEUVER WITH CARE

CONSIDER L/G EXTENSION
ENG MODE SEL ..... IGN
ATC ..... NOTIFY
ATC XPDR 7700 ..... CONSIDER
CREW OXY MASKS DILUTION ..... NORM
MAX FL: 100 / MEA-MORA

● **If CAB ALT above 14 000 ft:**

OXYGEN PAX MASK MAN ON ..... PRESS

FORCED LANDING

ATC ..... NOTIFY
ATC XPDR 7700 ..... CONSIDER
PREPARE CABIN AND COCKPIT
- *Loose equipment secured*
- *Survival equipment prepared*
- *Belts and shoulder harness locked.*

GPWS SYS ..... OFF
GPWS TERR ..... OFF
SIGNS ..... ON
EMER EXIT LT ..... ON
COMMERCIAL ..... OFF
LDG ELEV ..... SET
BARO ..... SET
DISREGARD NORM C/Ls
ELT (when conditions permit) ..... ON

● **For approach and landing:**
RAM AIR ..... ON
L/G lever ..... DOWN
SLATS / FLAPS ..... MAX AVAIL
GND SPLR ..... ARM

MAX BRK PR: 1000 PSI

● **At 2 000 ft AGL:**
CABIN CREW ..... NOTIFY FOR LANDING

● **At 500 ft AGL:**
BRACE FOR IMPACT ..... ORDER

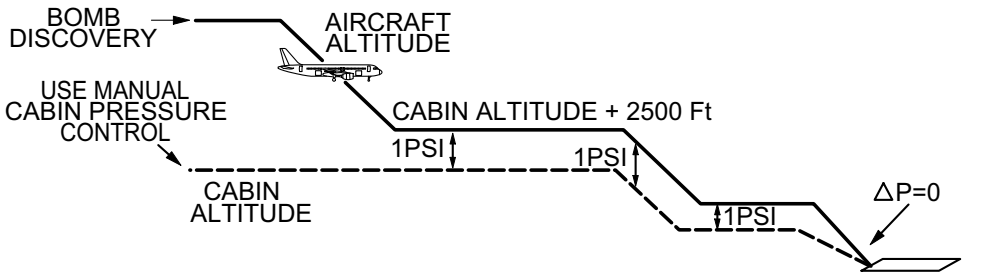
● **At touchdown:**
ALL ENG MASTERS ..... OFF
APU MASTER SW ..... OFF
BRAKES ON ACCU ONLY

● **When aircraft stopped:**
PARKING BRK ..... ON
ATC (VHF 1) ..... NOTIFY
ALL FIRE pb (ENGs & APU) ..... PUSH
ALL AGENTS (ENGs & APU) ..... DISCH

■ **If Evacuation required:**
EVACUATION ..... INITIATE
ELT ..... CHECK EMITTING
If not, switch on the transmitter.

■ **If Evacuation not required:**
CABIN CREW and PASSENGERS (PA) ..... NOTIFY

BOMB ON BOARD



CKPT / CAB COM ..... ESTABLISH

■ **If landing and evacuation possible within 30 min:**

ATC / COMPANY ..... NOTIFY

EVAC ..... PREPARE

■ **If landing and evacuation NOT possible within 30 min:**

AIRCRAFT (IF CLIMBING) ..... LEVEL OFF

CABIN PRESS MODE SEL ..... MAN

MAINTAIN CAB ALT

ATC / COMPANY ..... NOTIFY

TRGT SPEED: PREFER LO IAS

Low speed could reduce the consequences of possible structural damage, if the bomb explodes.

DESCENT TO CAB ALT + 2 500 ft or MEA-MORA ..... INITIATE

AVOID SHARP MANEUVERS

MAINTAIN CAB ALT

● **When at CAB ALT + 2 500 ft:**

MAINTAIN 1 PSI ΔP

GALLEY ..... OFF

FUEL RESERVES ..... DETERMINE

When flying at cabin altitude + 2 500 ft , the fuel consumption in CONF 1, with landing gear down, will be about 2.1 times that consumed in clean configuration.

● **When bomb secured at the LRBL or cannot be moved:**

Least Risk Bomb Location (LRBL) is the center of the RH aft cabin door

EMER EXIT LT ..... ON

COMMERCIAL ..... OFF

● **If fuel permits:**

FLAPS ..... AT LEAST CONF 1

L/G lever (except for flight over water) ..... DOWN

USE NORMAL CONF FOR LANDING

DURING FURTHER DESCENT: MAINTAIN MAX 1 PSI ΔP

● **During approach:**

CABIN PRESS MODE SEL ..... AUTO

Continued on the next page

BOMB ON BOARD (CONT'D)

● **When aircraft on ground and stopped in a remote area (if possible) :**

Refer to IC EMER EVAC

COCKPIT WINDSHIELD / WINDOW ARCING

Affected WINDOW/WINDSHIELD ANTI ICE C/B ..... PULL
- *ANTI ICE L WSHLD C/B AF10 [123VU]*
- *ANTI ICE R WSHLD C/B AF03 [123VU]*
- *ANTI ICE/WINDOWS L C/B X14 [122VU]*
- *ANTI ICE/WINDOWS R C/B W14 [122VU]*

COCKPIT WINDSHIELD / WINDOW CRACKED

TOUCH THE CRACK WITH A PEN (OR CAREFULLY WITH FINGERNAIL)

■ **If no crack on cockpit side:**
NO LIMITATION

■ **If cracks on cockpit side:**
MAX FL: 230 / MEA-MORA
CAB PRESS MODE SEL ..... MAN
DISREGARD THE CAB ALT TARGET TABLE DISPLAYED ON THE ECAM
MAN V/S CTL ..... AS RQRD
SET THE CABIN ALTITUDE ACCORDING TO THE TABLE BELOW TO MAINTAIN ΔP 5 PSI

FL	100	150	200	230
CABIN ALTITUDE	0	3 000	6 000	8 000

● **When starting the descent for approach:**
CAB PRESS MODE SEL ..... AUTO

● **If visibility not sufficient for approach due to damage:**
CONSIDER AUTOLAND

● **For approach, if AUTOLAND not available:**
CAB PRESS MODE SEL ..... MAN
MAN V/S CTL ..... FULL UP
MAX SPEED: 200 kt
PF SLIDING WINDOW ..... OPEN

OVERWEIGHT LANDING

USE CONF FULL FOR LANDING UNLESS SPECIFIED BY ABN PROC OR LIMITED BY LANDING PERF

MAX WEIGHT (1 000 kg) FOR LANDING IN CONF FULL (GO AROUND IN CONF 3 CLIMB GRADIENT 2.1 %)								
OAT °C	AIRPORT ELEVATION (feet)							
	0	2 000	4 000	6 000	8 000	10 000	12 000	14 000
<10	85	83	84	81	77	71	66	61
15	85	83	83	81	77	70	64	57
20	85	83	83	81	75	67	61	55
25	85	83	83	79	72	64	58	
30	84	83	81	77	69			
35	84	83	79	73	66			
40	84	81	75	69				
45	82	76	70					
50	78	72						
55								

- **If aircraft weight above maximum weight for landing in conf FULL:**
  USE FLAP 3 FOR LANDING

LDG DIST.....CHECK

- **For approach:**
  PACK 1+2 .....OFF OR SUPPLIED BY APU

- **If landing conf other than FULL:**
  USE CONF 1+F FOR GO AROUND

SPEED AT RUNWAY THRESHOLD: VLS

MINIMIZE V/S AT TOUCHDOWN

- **At main landing gear touchdown:**
  USE MAX REVERSER

- **After nosewheel touchdown:**
  APPLY BRAKES AS NECESSARY

- **When landing completed:**
  BRAKE FANS ❄ .....ON

SEVERE TURBULENCE

SEAT BELTS ..... ON

SPEED AND THRUST ..... ADJUST

FL	SPD or Mach	WEIGHT (1 000 kg)								
		44	48	52	56	60	64	68	72	76
		N1 (%)								
390	**0.76**	80.0	81.0	82.0	83.1	-	-	-	-	-
370	**0.76**	79.1	79.8	80.7	81.6	82.6	83.6	-	-	-
350	**0.76**	78.8	79.3	80.0	80.7	81.5	82.4	83.3	84.3	-
330	**0.76**	78.8	79.3	79.8	80.4	81.0	81.8	82.6	83.4	84.2
310	**275**	78.1	78.6	79.2	79.8	80.3	80.9	81.5	82.3	83.1
290	**275**	76.6	77.1	77.6	78.2	78.9	79.6	80.3	81.0	81.7
270	**275**	75.1	75.6	76.1	76.7	77.3	78.0	78.7	79.6	80.5
250	**275**	73.5	74.0	74.5	75.1	75.8	76.5	77.2	77.9	78.8
200	**275**	69.9	70.3	70.7	71.2	71.8	72.4	73.0	73.7	74.4
150	**250**	61.9	62.6	63.3	64.0	64.9	65.9	66.9	68.0	68.9
100	**250**	58.3	59.0	59.6	60.2	61.0	61.8	62.6	63.5	64.5
50	**250**	54.3	54.9	55.6	56.3	57.1	58.0	59.0	60.0	60.8

KEEP AUTO PILOT ON

- **If excessive thrust variations:**
  DISCONNECT A/THR

DESCENT TO OR BELOW OPT FL ..... CONSIDER

Consider descending to or below OPT FL in order to increase the margin to buffet

- **For approach:**
  A/THR ..... ON
  USE MANAGED SPEED

TAILSTRIKE

LAND ASAP

MAX FL: 100 / MEA-MORA

RAM AIR ..... ON

PACK 1 ..... OFF

PACK 2 ..... OFF

VOLCANIC ASH ENCOUNTER

180 ° TURN ..... INITIATE
ATC ..... NOTIFY
A/THR ..... OFF
THRUST (IF CONDS PERMIT) ..... REDUCE
CREW OXY MASKS ..... USE / 100 % / EMER
CABIN CREW ..... NOTIFY
OXYGEN PASSENGER MASK MAN ON ..... AS RQRD
ENG ANTI ICE ..... ON
WING ANTI ICE ..... ON
PACK FLOW ..... HI
CARGO ISOL VALVES ..... OFF
ENGINE PARAMETERS ..... MONITOR
AIRSPEED INDICATIONS ..... MONITOR

- **If visibility not sufficient for approach due to windshield damage:**
  CONSIDER AUTOLAND
  - **For approach, if AUTOLAND not available:**
    CAB PRESS MODE SEL ..... MAN
    MAN V/S CTL ..... FULL UP
    MAX SPEED: 200 kt
    PF SLIDING WINDOW ..... OPEN

ADR CHECK PROC

Apply the UNRELIABLE SPEED INDICATION procedure.

UNRELIABLE SPEED INDICATION

● **If the safe conduct of the flight is impacted:**

AP ..... OFF
A/THR ..... OFF
FD ..... OFF
PITCH/THRUST:
Below THRUST RED ALT ..... 15° / TOGA
Above THRUST RED ALT and Below FL 100 ..... 10° / CLB
Above THRUST RED ALT and Above FL 100 ..... 5° / CLB
FLAPS (if CONF 0(1)(2)(3)) ..... MAINTAIN CURRENT CONF
FLAPS (if CONF FULL) ..... SELECT CONF 3 AND MAINTAIN
SPEEDBRAKES ..... CHECK RETRACTED
L/G ..... UP
When at, or above MSA or Circuit Altitude: Level off for troubleshooting.

● **To level off:**

AP ..... OFF
A/THR ..... OFF
FD ..... OFF
SPEEDBRAKES ..... CHECK RETRACTED
PITCH/THRUST TABLE ..... APPLY

PITCH / THRUST FOR LEVEL OFF				
		70 t 155 000 lb	60 t 130 000 lb	50 t 110 000 lb
SLATS / FLAPS EXTENDED				
CONF	PITCH	THRUST % N1 (Resultant speed)		
3	7°	64% (155 kt)	60% (140 kt)	56% (130 kt)
2	5.5°	62% (170 kt)	58% (160 kt)	54% (145 kt)
1+F	5°	62% (190 kt)	58% (175 kt)	54% (160 kt)
1	6.5°	62% (205 kt)	58% (190 kt)	54% (170 kt)
CLEAN				
PITCH	FL	THRUST % N1 (Resultant speed)		
4° at or below FL250	100	62% (245 kt)	60% (225 kt)	54% (205 kt)
	200	70% (245 kt)	66% (225 kt)	62% (205 kt)
3° above FL250	300	80% (265 kt)	76% (245 kt)	72% (225 kt)
	350	84% (255 kt)	80% (240 kt)	76% (220 kt)
	400	/	86% (235 kt)	80% (220 kt)

FLYING TECHNIQUE TO STABILIZE SPEED

Stabilize the altitude. When altitude is stabilized:
- If the pitch is above the target pitch, increase the thrust and maintain the altitude.
- If the pitch is below the target pitch, decrease the thrust and maintain the altitude.

When the pitch reaches the target pitch, adjust the thrust to keep this target pitch.

Continued on the next page

UNRELIABLE SPEED INDICATION (CONT'D)

● **When flight path is stabilized:**

AP ..... OFF
A/THR ..... OFF
FD ..... OFF
SPEEDBRAKES ..... CHECK RETRACTED
FLIGHT PATH ..... KEEP STABILIZED

RESPECT STALL WARNING

AFFECTED ADR IDENTIFICATION (WITHOUT BUSS)

PROBE/WINDOW HEAT ..... ON
ALL SPEED INDICATIONS ..... CROSSCHECK

ADR3 and STBY speeds use the data of the same probe.

■ **If at least one ADR confirmed reliable:**

RELIABLE AIR DATA ..... USE
UNRELIABLE ADR pb(s) ..... OFF

■ **If affected ADR(s) cannot be identified, or all ADRs affected:**

KEEP ONE ADR ON
TWO ADR pbs ..... OFF
FOR LANDING: USE FLAP 3
APP SPD ..... VLS +10 kt
LDG DIST PROC ..... APPLY

● **For flight continuation:**

USE PITCH/THRUST TABLES

AFFECTED ADR IDENTIFICATION (WITH BUSS)

PROBE/WINDOW HEAT ..... ON
ALL SPEED INDICATIONS ..... CROSSCHECK

ADR3 and STBY speeds use the data of the same probe.

■ **If at least one ADR confirmed reliable:**

RELIABLE AIR DATA ..... USE
UNRELIABLE ADR pb(s) ..... OFF

■ **If affected ADR(s) cannot be identified, or all ADRs affected:**

● **When above FL 250:**

KEEP ONE ADR ON
TWO ADR pbs ..... OFF

● **For flight continuation:**

USE PITCH/THRUST TABLES

● **When below FL 250, if speed still unreliable:**

ALL ADR pbs ..... OFF
SPEED ..... FLY THE GREEN

Continued on the next page

UNRELIABLE SPEED INDICATION (CONT'D)

Note: If the BUSS does not react to longitudinal stick input when flying the green area of the speed scale, the flight crew must disregard the BUSS and use pitch/thrust tables.

NAV ADR 1+2+3 FAULT Procedure .....APPLY

CLIMB

CLIMB IN CLEAN CONFIGURATION				
		70 t 155 000 lb	60 t 130 000 lb	50 t 110 000 lb
THRUST	FL	PITCH (Resultant speed)		
CLB	50	11° (235 kt)	13° (215 kt)	16° (195 kt)
	100	10° (235 kt)	12° (215 kt)	14° (195 kt)
	200	7° (235 kt)	8° (220 kt)	10° (195 kt)
	300	5° (235 kt)	6° (220 kt)	7° (200 kt)
	400	/	4° (215 kt)	5° (195 kt)

CRUISE

FLYING TECHNIQUE TO STABILIZE SPEED

Stabilize the altitude. When altitude is stabilized:
- If the pitch is above the target pitch, increase the thrust and maintain the altitude.
- If the pitch is below the target pitch, decrease the thrust and maintain the altitude.

When the pitch reaches the target pitch, adjust the thrust to keep this target pitch.

LEVEL FLIGHT IN CLEAN CONFIGURATION				
		70 t 155 000 lb	60 t 130 000 lb	50 t 110 000 lb
PITCH	FL	THRUST % N1 (Resultant speed)		
4° at or below FL250	100	62% (245 kt)	60% (225 kt)	54% (205 kt)
	200	70% (245 kt)	66% (225 kt)	62% (205 kt)
3° above FL250	300	80% (265 kt)	76% (245 kt)	72% (225 kt)
	350	84% (255 kt)	80% (240 kt)	76% (220 kt)
	400	/	86% (235 kt)	80% (220 kt)

Note: If the failure is due to radome destruction, the drag will increase and therefore N1 must be increased by 5 %. Fuel flow will increase by about 27 %.

DESCENT

DESCENT IN CLEAN CONFIGURATION				
		70 t 155 000 lb	60 t 130 000 lb	50 t 110 000 lb
THRUST	PITCH	Resultant speed		
IDLE	1°	245 kt	230 kt	210 kt

INITIAL / INTERMEDIATE APPROACH

APPLY FLYING TECHNIQUE TO STABILIZE SPEED

Continued on the next page

UNRELIABLE SPEED INDICATION (CONT'D)

LEVEL FLIGHT				
		70 t 155 000 lb	60 t 130 000 lb	50 t 110 000 lb
WITH LANDING GEAR UP				
CONF	PITCH	THRUST % N1 (Resultant speed)		
0	5.5°	58% (225 kt)	54% (205 kt)	50% (185 kt)
1	6.5°	62% (205 kt)	58% (190 kt)	54% (170 kt)
1+F	5°	62% (190 kt)	58% (175 kt)	54% (160 kt)
2	5.5°	62% (170 kt)	58% (160 kt)	54% (145 kt)
WITH LANDING GEAR DOWN				
3	7°	70% (155 kt)	64% (140 kt)	60% (130 kt)

FINAL APPROACH AT -3° DESCENT FLIGHT PATH

APPROACH IN CONF 3 AND L/G EXTENDED				
		70 t 155 000 lb	60 t 130 000 lb	50 t 110 000 lb
CONF	PITCH	THRUST (% N1)		
3	4°	54%	50%	46%

ADR 1+2+3 FAULT

In case of triple ADR failure, ECAM only displays dual ADR alerts.

ALL ADR pbs ..... OFF

STBY INST ..... USE

DISREGARD ECAM ACTIONS FOR AIR DATA SWTG AND ATC

TCAS & ATC ALT RPTG INOP

STALL WARNING LOST
EXPECT ALTN LAW

FL	390	370	350	330	310	290	280 and below
MAX SPEED (kt)	252	265	278	290	305	315	320

USE RUDDER WITH CARE

WHEN L/G DOWN: DIRECT LAW

CABIN PRESS MODE SEL ..... MAN

MAN V/S CTL ..... AS RQRD

Target CAB PRESS V/S:

- *Climb: 500 ft/min*
- *Descent: 300 ft/min*

AIRCRAFTCRZ FL	CAB ALT TARGET (ft)
410	8000
350	7000
300	5500
250	3000
<200	0

● **For approach:**

CAT 1 ONLY

FOR LANDING: USE FLAP 3

GPWS LDG FLAP 3 ..... ON

LDG DIST PROC ..... APPLY

● **For L/G GRVTY EXTN:**

LDG GEAR GRVTY EXTN handcrank ..... PULL AND TURN

● **When L/G downlocked:**

L/G lever ..... DOWN

GEAR DOWN indications ..... CHECK

L/G DOORS REMAIN OPEN

● **During final approach:**

MAN V/S CTL ..... FULL UP

● **Before door opening:**

CHECK ΔP ZERO

IR ALIGNMENT IN ATT MODE

IR MODE sel (affected IR) ..... ATT

KEEP SPEED, HEADING, AND FL CONSTANT FOR 30 s

■ **For alignment through MCDU:**

FMS DATA page ..... SELECT

IRS MONITOR key ..... PRESS

[SET HDG key] A/C HDG ..... ENTER

■ **For alignment through ADIRS panel:**

DISPLAY SYS sel ..... SELECT AFFECTED SYS

DISPLAY DATA sel ..... HDG

● **If "H" written on the "5" key of ADIRS panel:**

H key ..... PRESS

Degree marker, zero decimal point, ENT, and CLR lights come on.

A/C HEADING ..... INSERT

ENT key ..... PRESS

CROSSCHECK HEADING REGULARLY WITH STBY COMPASS AND UPDATE AS REQUIRED

NAV FM / GPS POS DISAGREE

A/C POS ..... CHECK

■ **During climb, cruise, or descent:**
FMS PROG page ..... SELECT

■ **If ESTIMATED ACCUR below REQUIRED ACCUR:**
CONSIDER NAV MODE AND ND ARC/ROSE NAV

■ **If ESTIMATED ACCUR above REQUIRED ACCUR:**
HDG/TRK MODE..... SELECT
USE RAW DATA

FMS POSITION MONITOR page..... SELECT

■ **If one FM position agrees with onside GPIRS position:**
USE ASSOCIATED AP/FD

■ **If both FM positions DO NOT agree with onside GPIRS position:**
GPS..... DESELECT
USE RAW DATA

■ **During ILS/LOC approach:**
NAV MODE: DO NOT USE
CONTINUE APPROACH

■ **During RNAV GNSS, RNAV RNP, or GLS approach:**

● **If visual references not sufficient:**
GO AROUND

■ **During VOR, VOR-DME, NDB, or NDB-DME approach:**
HDG/TRK MODE..... SELECT
USE RAW DATA

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SMOKE / FUMES / AVNCS SMOKE

LAND ASAP

IF PERCEPTIBLE SMOKE APPLY IMMEDIATELY:

CREW OXY MASKS (if required) ... USE/100%/EMERG

VENTILATION BLOWER ..... OVRD

VENTILATION EXTRACT ..... OVRD

CAB FANS .....OFF

GALY & CAB.....OFF

SIGNS ..... ON

CKPT / CAB COM..... ESTABLISH

- **If smoke source immediately obvious, accessible, and extinguishable:**

  FAULTY EQPT.....ISOLATE

- **If smoke source not immediately isolated:**

  DIVERSION ..... INITIATE

  DESCENT TO FL 100 / MEA-MORA ..... INITIATE

- **At ANY TIME of the procedure, if SMOKE / FUMES becomes the GREATEST THREAT :**

  REMOVAL OF SMOKE / FUMES .....CONSIDER

  Refer to ABN-27 Removal of Smoke / Fumes

  ELEC EMER CONFIG .....CONSIDER

  Refer to the end of the procedure to set ELEC EMER CONFIG.

- **At ANY TIME of the procedure, if situation becomes UNMANAGEABLE :**

  IMMEDIATE LANDING .....CONSIDER

Continued on the next page

SMOKE / FUMES / AVNCS SMOKE (CONT'D)

● **If Air COND smoke suspected:**

APU BLEED ..... OFF
VENTILATION BLOWER ..... AUTO
VENTILATION EXTRACT ..... AUTO
PACK 1 ..... OFF

● **If smoke continues:**

PACK 1 ..... ON
PACK 2 ..... OFF

● **If smoke persists:**

PACK 2 ..... ON
VENTILATION BLOWER ..... OVRD
VENTILATION EXTRACT ..... OVRD

REMOVAL OF SMOKE / FUMES ..... CONSIDER
Refer to ABN-27 Removal of Smoke / Fumes

● **If CABIN EQPT smoke suspected:**

● **If smoke continues:**

EMER EXIT LIGHT ..... ON
COMMERCIAL ..... OFF
SMOKE DISSIPATION ..... CHECK
FAULTY EQPT ..... SEARCH / ISOLATE

● **If smoke persists or if faulty equipment confirmed isolated:**

COMMERCIAL ..... NORM

REMOVAL OF SMOKE / FUMES ..... CONSIDER
Refer to ABN-27 Removal of Smoke / Fumes

Continued on the next page

SMOKE / FUMES / AVNCS SMOKE (CONT'D)

- **If smoke source cannot be determined and persists or AVNCS / ELECTRICAL smoke suspected:**

  ELEC EMER CONFIG .....CONSIDER

  Refer to the end of the procedure to set ELEC EMER CONFIG.

- **If smoke disappears within 5 minutes**

  NORMAL VENTILATION ..... RESTORE

TO SET ELEC EMER CONFIG

EMER ELEC GEN 1 LINE.....OFF

EMER ELEC PWR ..... MAN ON

- **When EMER GEN AVAIL:**

  APU GEN .....OFF

  GEN 2.....OFF

  APPLY ELEC EMER CONFIG PROCEDURE, BUT DO NOT RESET GEN, EVEN IF REQUESTED BY ECAM.

- **At 3 min or 2 000 ft AAL before landing:**

  GEN 2..... ON

  EMER ELEC GEN 1 LINE..... ON

- **When aircraft stopped:**

  ALL GENs .....OFF

REMOVAL OF SMOKE / FUMES

EMER EXIT LIGHT ..... ON

■ **If fuel vapors:**

CAB FANS ..... ON
PACK 1 ..... OFF
PACK 2 ..... OFF

■ **If no fuel vapors:**

CAB FANS ..... OFF
PACK FLOW ..... HI

LDG ELEV ..... 10 000 FT / MEA-MORA
DESCENT TO FL 100 / MEA-MORA ..... INITIATE
ATC ..... NOTIFY
SMOKE / FUMES / AVNCS SMOKE PROC .....
..... CONTINUE

Refer to ABN-27 Smoke / Fumes / AVNCS Smoke

● **At FL 100 or MEA-MORA:**

● **If in ELEC EMER CONFIG:**

APU MASTER sw ..... ON

PACK 1 ..... OFF
PACK 2 ..... OFF
CABIN PRESS MODE SEL ..... MAN
MAN V/S CTL ..... FULL UP
RAM AIR ..... ON
APU MASTER sw ..... OFF

● **If smoke persists:**

MAX SPEED: 200 kt
COCKPIT DOOR ..... OPEN

Continued on the next page

REMOVAL OF SMOKE / FUMES (CONT'D)

HEADSETS ..... ON

PM SLIDING WINDOW .....OPEN

- **When window open:**

  NON-AFFECTED PACK(s) ..... ON

  VISUAL WARNINGS (noisy CKPT).....
  .....MONITOR

  SMOKE / FUMES / AVNCS SMOKE PROC ....
  .....CONTINUE

  Refer to ABN-27 Smoke / Fumes / AVNCS Smoke

SMOKE / FIRE FROM LITHIUM BATTERY

If necessary, transfer control to the flight crewmember seated on the opposite side of the fire.

CKPT / CAB COM ..... ESTABLISH

STORAGE AFTER Li BAT FIRE cabin procedure .....
..... REQUEST INITIATION

- **If flames:**
  CREW OXY MASK (PF) ..... USE
  SMOKE HOOD (PM) ..... USE
  HALON EXTINGUISHER ..... USE
- **If no flames or when flames extinguished:**
  - **If not possible to remove device from cockpit:**
    WATER or NON-ALCOHOLIC LIQUID.....
    ..... POUR ON DEVICE
    DEVICE..... MONITOR
  - **If possible to remove device from cockpit:**
    DEVICE..... TRANSFER TO CABIN

- **At ANY TIME of the procedure, if SMOKE becomes the GREATEST THREAT:**
  REMOVAL OF SMOKE / FUMES procedure .....
  ..... CONSIDER
  Refer to ABN-27 Removal of Smoke / Fumes

- **At ANY TIME of the procedure, if situation becomes UNMANAGEABLE:**
  IMMEDIATE LANDING..... CONSIDER

WHEEL TIRE DAMAGE SUSPECTED

LDG DIST PROC.....APPLY

Performance impact of one burst tire is equivalent to one brake released if EFB LDG PERF application is used.

Performance impact of one burst tire is equivalent to one tire damage if the QRH is used.

TAXI WITH CARE

Refer to FCOM / LIM LG Landing Gear - Taxi with Deflated or Damaged Tires.

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METHOD TO DETERMINE AIRCRAFT PERFORMANCE AT LANDING WITHOUT OR WITH A SINGLE FAILURE

Use the following method to determine the runway landing performance level, the FLAPS lever position for landing, the VAPP, and the Factored Landing Distance (FLD):

RUNWAY LANDING PERFORMANCE LEVEL - CODE
Use the Runway Condition Assessment Matrix to determine the runway landing performance level and code.

FLAPS LEVER POSITION FOR LANDING
Select the FLAPS lever position requested by the ECAM*.

* If there are no ECAM instructions, the FLAPS lever position for landing is at the flight crew's discretion.

VAPP
Determine the VAPP.

FACTORED LANDING DISTANCE (FLD)

LANDING DISTANCE **(LD)**
Determine the Landing Distance **(LD)** using the appropriate Landing Distance table.

X

MEL LANDING PENALTY FACTOR
Multiply **LD** by the landing penalty factor specified in the MEL, if any.

X

SAFETY MARGIN
Add a margin, as per airline policy. Airbus recommends a 15% margin. Under exceptional circumstances, the flight crew may disregard this margin.

⇩

FACTORED LANDING DISTANCE **(FLD)**
FLD = LD x MEL LANDING PENALTY FACTOR x SAFETY MARGIN

METHOD TO DETERMINE AIRCRAFT PERFORMANCE AT LANDING WITH SEVERAL FAILURES

Use the following method to determine the runway landing performance level, the FLAPS lever position for landing, the VAPP, and the Factored Landing Distance (FLD):

RUNWAY LANDING PERFORMANCE LEVEL - CODE

Use the Runway Condition Assessment Matrix to determine the runway landing performance level and code.

FLAPS LEVER POSITION FOR LANDING

Select the FLAPS lever position requested by the ECAM*.

* If there are no ECAM instructions, the FLAPS lever position for landing is at the flight crew's discretion.

VAPP

Determine the VAPP using the highest ΔVREF.

FACTORED LANDING DISTANCE (FLD)

DETERMINE THE LANDING DISTANCE (LDG DIST) OF THE FAILURE THAT HAS THE MOST EFFECT

1 - Identify the failure with the longest REF DIST
2 - Calculate the landing distance **(LDG DIST)** for this failure taking into account all corrections.

+

DETERMINE THE EFFECT OF THE OTHER FAILURE (ΔLD)

1 - Identify the [REF DIST with failure] of the other failure (no correction)**
2 - Calculate **ΔLD** = [REF DIST with failure] - [REF DIST without failure].

** Use the FLAPS lever position selected for landing. If not available, use FLAPS 3.

⇩

DETERMINE THE LANDING DISTANCE WITH SEVERAL FAILURES (LD)

LD = LDG DIST + ΔLD

X

MEL LANDING PENALTY FACTOR

Multiply **LD** by the landing penalty factor specified in the MEL, if any.

X

SAFETY MARGIN

Add a margin, as per airline policy.
Airbus recommends a 15% margin. Under exceptional circumstances, the flight crew may disregard this margin.

⇩

FACTORED LANDING DISTANCE (FLD)

FLD = LD x MEL LANDING PENALTY FACTOR x SAFETY MARGIN

RUNWAY CONDITION ASSESSMENT MATRIX FOR LANDING

Runway Surface Conditions		Observations on Deceleration and Directional Control	Related Landing Performance		Maximum Crosswind for Landing (Gust included)
Runway State or / and Runway Contaminant	ESF(1) or PIREP(2)		Code	Level	
Dry	-	-	**6**	**DRY**	38 kt
Damp **Wet** Up to 3 mm (1/8") of water **Slush** Up to 3 mm (1/8") **Dry snow** Up to 3 mm (1/8") **Wet snow** Up to 3 mm (1/8") **Frost**	**Good**	Braking deceleration is normal for the wheel braking effort applied. Directional control is normal.	**5**	**GOOD**	38 kt
Compacted snow OAT at or below -15 °C	**Good to Medium**	Braking deceleration and controllability is between Good and Medium.	**4**	**GOOD TO MEDIUM**	29 kt
Dry snow More than 3 mm (1/8"), up to 100 mm (4") **Wet snow** More than 3 mm (1/8"), up to 30 mm (6/5") **Compacted snow** OAT above -15 °C **Dry snow over compacted snow** **Wet snow over compacted snow** **Slippery when wet**	**Medium**	Braking deceleration is noticeably reduced for the wheel braking effort applied. Directional control may be reduced.	**3**	**MEDIUM**	25 kt
Water More than 3 mm (1/8"), up to 12.7 mm (1/2") **Slush** More than 3 mm (1/8"), up to 12.7 mm (1/2")	**Medium to Poor**	Braking deceleration and controllability is between Medium and Poor. Potential for hydroplaning exists.	**2**	**MEDIUM TO POOR**	20 kt
Ice (cold & dry)	**Poor**	Braking deceleration is significantly reduced for the wheel braking effort applied. Directional control may be significantly reduced.	**1**	**POOR**	15 kt
Wet ice **Water on top of Compacted Snow** **Dry Snow or Wet Snow over ice**	**Nil**	Braking deceleration is minimal to non-existant for the wheel braking effort applied. Directional control may be uncertain.	**-**	**-**	-

(1) ESF: Estimated Surface Friction
(2) PIREP: Pilot Report of Braking Action

Note: Refer for FCOM LIM-AFS chapter for Automatic Approach, Landing and Rollout limitations.

Note: Treated/Sanded Ice is considered as Medium Braking Action.

VAPP DETERMINATION WITHOUT FAILURE

The FMGS performs the following VAPP computation for landing in normal configuration (CONF 3 or CONF FULL).

VAPP = VLS + APPR COR

VLS												
Weight (T)		40	42	46	50	54	58	62	66	70	74	78
VLS CONF FULL (kt) (=VREF)	CG < 25%	108	111	116	121	125	130	134	138	142	146	150
	CG ≥ 25%	106	109	114	119	123	128	132	136	140	144	148
VLS CONF 3 (kt)	CG < 25%	112	115	119	125	129	135	139	143	147	151	155
	CG ≥ 25%	110	113	117	123	127	133	137	141	145	149	153

+

APPRoach **COR**rection

APPR COR = Highest of
- 5kt in case of A/THR ON
- 5kt in case of Ice Accretion in CONF FULL
  10kt in case of Ice Accretion in CONF 3
- 1/3 Headwind component
  (excluding gust - maximum 15 kt)

⇩

VAPP

VAPP = VLS + APPR COR

⇩

LANDING DISTANCE CORRECTION (**SPD** column in Landing Distance table)

- If APPR COR is equal to 1/3 Headwind component: **No SPD**
- If APPR COR is greater than 1/3 Headwind component: **SPD = APPR COR**

CAUTION	Any extra pilot approach speed increment must be added to VAPP, and must be taken into account in SPD column for Landing Distance computation.

Note: In case of strong or gusty crosswind greater than 20kt, VAPP should be at least VLS + 5 kt. The 5kt increment above VLS may be increased up to 15kt at the flight crew's discretion.

VAPP DETERMINATION WITH FAILURE

VAPP = VREF + ΔVREF + APPR COR

VREF

Weight (T)		40	42	46	50	54	58	62	66	70	74	78
VREF = VLS CONF FULL (kt)	CG < 25%	108	111	116	121	125	130	134	138	142	146	150
	CG ≥ 25%	106	109	114	119	123	128	132	136	140	144	148

+

ΔVREF

Refer to the applicable Landing Distance table

+

APPRoach **COR**rection

ΔVREF ⩽ 10 kt	APPR COR= Highest of • 5kt in case of A/THR ON • 5kt in case of Ice Accretion in CONF FULL 10kt in case of Ice Accretion in CONF 3 • 1/3 Headwind component (excluding gust - maximum 15 kt) *APPR COR + ΔVREF must be limited to 20kt*
10 kt < ΔVREF < 20 kt	APPR COR = 1/3 Headwind component (excluding gust - maximum 10 kt) *APPR COR + ΔVREF must be limited to 20kt*
ΔVREF ⩾ 20 kt	APPR COR = 0kt *N/A displayed in the SPD column of the Landing Distance table*

⇩

VAPP

VAPP = VREF + ΔVREF + APPR COR

⇩

LANDING DISTANCE CORRECTION (**SPD** column in Landing Distance table)

- If APPR COR is equal to 1/3 Headwind component: **No SPD**
- If APPR COR is greater than 1/3 Headwind component: **SPD = APPR COR**

CAUTION	Any extra pilot approach speed increment must be added to VAPP, and must be taken into account in SPD column for Landing Distance computation. If N/A is displayed in the SPD column of the Landing Distance table, do not add any extra pilot approach speed increment.

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LANDING DISTANCE WITHOUT FAILURE

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), VAPP=VLS without APPR COR.

6 - DRY										
Corrections on Landing Distance (m)			WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
Braking Mode	LDG CONF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
Maximum MANUAL	FULL	**1 090**	+ 50	+ 70	+ 40	+ 120	+ 30	+ 20	- 10	+ 780
	3	**1 170**	+ 50	+ 80	+ 40	+ 130	+ 40	+ 20	- 10	+ 940
AUTOBRAKE MED	FULL	**1 370**	+ 30	+ 90	+ 50	+ 130	+ 50	+ 10	0	+ 230
	3	**1 450**	+ 40	+ 100	+ 50	+ 140	+ 50	+ 10	0	+ 250
AUTOBRAKE LOW	FULL	**1 950**	+ 40	+ 140	+ 70	+ 200	+ 70	+ 30	- 10	+ 260
	3	**2 090**	+ 50	+ 140	+ 80	+ 210	+ 70	+ 20	- 10	+ 290

(1) Automatic Landing correction: if CONF FULL, add 280m. If CONF 3, add 300m.
(2) Weight correction: subtract 10m per 1T below 66T.

5 - GOOD										
Corrections on Landing Distance (m)			WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
Braking Mode	LDG CONF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
Maximum MANUAL	FULL	**1 410**	+ 50	+ 110	+ 70	+ 210	+ 60	+ 50	- 30	+ 620
	3	**1 550**	+ 50	+ 120	+ 80	+ 230	+ 70	+ 60	- 40	+ 750
AUTOBRAKE MED	FULL	**1 460**	+ 50	+ 110	+ 70	+ 210	+ 60	+ 50	- 10	+ 220
	3	**1 610**	+ 50	+ 120	+ 80	+ 230	+ 70	+ 60	- 30	+ 240
AUTOBRAKE LOW	FULL	**1 950**	+ 40	+ 140	+ 70	+ 200	+ 70	+ 30	- 10	+ 260
	3	**2 090**	+ 50	+ 140	+ 80	+ 210	+ 70	+ 20	- 10	+ 280

(1) Automatic Landing correction: if CONF FULL, add 310m. If CONF 3, add 330m.
(2) Weight correction: if CONF FULL, subtract 10m per 1T below 66T. If CONF 3, subtract 20m per 1T below 66T.

4 - GOOD TO MEDIUM										
Corrections on Landing Distance (m)			WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
Braking Mode	LDG CONF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
Maximum MANUAL	FULL	**1 660**	+ 40	+ 90	+ 60	+ 190	+ 60	+ 70	- 70	+ 690
	3	**1 810**	+ 40	+ 100	+ 70	+ 200	+ 60	+ 80	- 80	+ 840
AUTOBRAKE MED	FULL	**1 720**	+ 40	+ 90	+ 60	+ 200	+ 50	+ 70	- 90	+ 210
	3	**1 870**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 90	- 110	+ 210
AUTOBRAKE LOW	FULL	**1 960**	+ 40	+ 140	+ 70	+ 210	+ 70	+ 50	- 20	+ 260
	3	**2 100**	+ 50	+ 140	+ 80	+ 220	+ 70	+ 60	- 30	+ 290

(1) Automatic Landing correction: if CONF FULL, add 310m. If CONF 3, add 320m.
(2) Weight correction: if CONF FULL, subtract 10m per 1T below 66T. If CONF 3, subtract 20m per 1T below 66T.

Continued on the next page

LANDING DISTANCE WITHOUT FAILURE (CONT'D)

3 - MEDIUM										
Corrections on Landing Distance (m)			WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
Braking Mode	LDG CONF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
Maximum MANUAL	FULL	**1 860**	+ 40	+ 100	+ 70	+ 220	+ 60	+ 110	- 90	+ 660
	3	**2 030**	+ 50	+ 110	+ 80	+ 230	+ 80	+ 120	- 110	+ 800
AUTOBRAKE MED	FULL	**1 920**	+ 40	+ 100	+ 70	+ 230	+ 60	+ 110	- 120	+ 210
	3	**2 100**	+ 40	+ 110	+ 80	+ 240	+ 80	+ 130	- 150	+ 220
AUTOBRAKE LOW	FULL	**2 060**	+ 40	+ 130	+ 80	+ 240	+ 70	+ 90	- 60	+ 250
	3	**2 220**	+ 50	+ 140	+ 80	+ 240	+ 80	+ 110	- 80	+ 270

(1) Automatic Landing correction: if CONF FULL, add 320m. If CONF 3, add 330m.
(2) Weight correction: subtract 20m per 1T below 66T.

2 - MEDIUM TO POOR										
Corrections on Landing Distance (m)			WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
Braking Mode	LDG CONF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
Maximum MANUAL	FULL	**2 080**	+ 70	+ 160	+ 110	+ 360	+ 110	+ 150	- 100	+ 480
	3	**2 380**	+ 80	+ 180	+ 140	+ 410	+ 130	+ 200	- 130	+ 570
AUTOBRAKE MED	FULL	**2 110**	+ 70	+ 160	+ 120	+ 370	+ 110	+ 160	- 130	+ 240
	3	**2 390**	+ 80	+ 200	+ 140	+ 420	+ 130	+ 210	- 170	+ 280
AUTOBRAKE LOW	FULL	**2 140**	+ 70	+ 160	+ 120	+ 370	+ 100	+ 160	- 60	+ 250
	3	**2 420**	+ 80	+ 190	+ 140	+ 420	+ 130	+ 210	- 120	+ 290

(1) Automatic Landing correction: if CONF FULL, add 350m. If CONF 3, add 370m.
(2) Weight correction: if CONF FULL, subtract 20m per 1T below 66T. If CONF 3, subtract 30m per 1T below 66T.

1 - POOR										
Corrections on Landing Distance (m)			WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
Braking Mode	LDG CONF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
Maximum MANUAL	FULL	**3 450**	+ 70	+ 150	+ 130	+ 560	+ 160	+ 920	- 320	+ 480
	3	**3 970**	+ 80	+ 160	+ 150	+ 610	+ 180	+ 1 150	- 430	+ 570
AUTOBRAKE MED	FULL	**3 510**	+ 70	+ 140	+ 130	+ 570	+ 160	+ 930	- 380	+ 240
	3	**4 020**	+ 80	+ 170	+ 150	+ 610	+ 180	+ 1 150	- 510	+ 280
AUTOBRAKE LOW	FULL	**3 540**	+ 70	+ 140	+ 130	+ 580	+ 150	+ 940	- 380	+ 250
	3	**4 040**	+ 80	+ 170	+ 150	+ 610	+ 190	+ 1 150	- 520	+ 290

(1) Automatic Landing correction: if CONF FULL, add 350m. If CONF 3, add 360m.
(2) Weight correction: if CONF FULL, subtract 30m per 1T below 66T. If CONF 3, subtract 40m per 1T below 66T.

LANDING DISTANCE WITH FAILURE

ANTI ICE SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
WING ANTI ICE SYS	FULL	10	**1 260**	+ 40	+ 70	+ 50	+ 130	+ 40	+ 20	- 10	+ 600
FAULT with Ice Accretion	3	16	**1 370**	+ 50	+ 80	+ 50	+ 120	+ 40	+ 30	- 20	+ 770

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
WING ANTI ICE SYS	FULL	10	**1 640**	+ 50	+ 110	+ 80	+ 220	+ 70	+ 60	- 40	+ 450
FAULT with Ice Accretion	3	16	**1 820**	+ 50	+ 120	+ 90	+ 240	+ 80	+ 70	- 60	+ 570

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
WING ANTI ICE SYS	FULL	10	**1 870**	+ 40	+ 90	+ 70	+ 200	+ 60	+ 80	- 80	+ 530
FAULT with Ice Accretion	3	16	**2 050**	+ 40	+ 90	+ 80	+ 200	+ 70	+ 90	- 90	+ 670

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

3 - MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
WING ANTI ICE SYS	FULL	10	**2 080**	+ 40	+ 100	+ 80	+ 230	+ 80	+ 110	- 110	+ 500
FAULT with Ice Accretion	3	16	**2 300**	+ 40	+ 110	+ 90	+ 240	+ 80	+ 130	- 130	+ 630

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

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ANTI ICE SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
WING ANTI ICE SYS	FULL	10	**2 410**	+ 70	+ 150	+ 130	+ 370	+ 120	+ 170	- 130	+ 360
FAULT with Ice Accretion	3	16	**2 790**	+ 80	+ 160	+ 150	+ 420	+ 140	+ 230	- 170	+ 440

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
WING ANTI ICE SYS	FULL	10	**3 770**	+ 70	+ 140	+ 150	+ 570	+ 170	+ 930	- 450	+ 360
FAULT with Ice Accretion	3	16	**4 360**	+ 80	+ 160	+ 170	+ 610	+ 200	+ 1 150	- 580	+ 440

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

BLEED SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
The following ECAM alerts with Ice Accretion: -DUAL BLEED FAULT -WING or ENG BLEED LEAK -X BLEED FAULT -ENG BLEED LO TEMP	FULL	10	**1 260**	+ 40	+ 70	+ 50	+ 130	+ 40	+ 20	- 10	+ 600
	3	16	**1 370**	+ 50	+ 80	+ 50	+ 120	+ 40	+ 30	- 20	+ 770

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
The following ECAM alerts with Ice Accretion: -DUAL BLEED FAULT -WING or ENG BLEED LEAK -X BLEED FAULT -ENG BLEED LO TEMP	FULL	10	**1 640**	+ 50	+ 110	+ 80	+ 220	+ 70	+ 60	- 40	+ 450
	3	16	**1 820**	+ 50	+ 120	+ 90	+ 240	+ 80	+ 70	- 60	+ 570

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
The following ECAM alerts with Ice Accretion: -DUAL BLEED FAULT -WING or ENG BLEED LEAK -X BLEED FAULT -ENG BLEED LO TEMP	FULL	10	**1 870**	+ 40	+ 90	+ 70	+ 200	+ 60	+ 80	- 80	+ 530
	3	16	**2 050**	+ 40	+ 90	+ 80	+ 200	+ 70	+ 90	- 90	+ 670

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

Continued on the next page

BLEED SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

3 - MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
The following ECAM alerts	FULL	10	**2 080**	+ 40	+ 100	+ 80	+ 230	+ 80	+ 110	- 110	+ 500
with Ice Accretion: -DUAL BLEED FAULT -WING or ENG BLEED LEAK -X BLEED FAULT -ENG BLEED LO TEMP	3	16	**2 300**	+ 40	+ 110	+ 90	+ 240	+ 80	+ 130	- 130	+ 630

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
The following ECAM alerts	FULL	10	**2 410**	+ 70	+ 150	+ 130	+ 370	+ 120	+ 170	- 130	+ 360
with Ice Accretion: -DUAL BLEED FAULT -WING or ENG BLEED LEAK -X BLEED FAULT -ENG BLEED LO TEMP	3	16	**2 790**	+ 80	+ 160	+ 150	+ 420	+ 140	+ 230	- 170	+ 440

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
The following ECAM alerts	FULL	10	**3 770**	+ 70	+ 140	+ 150	+ 570	+ 170	+ 930	- 450	+ 360
with Ice Accretion: -DUAL BLEED FAULT -WING or ENG BLEED LEAK -X BLEED FAULT -ENG BLEED LO TEMP	3	16	**4 360**	+ 80	+ 160	+ 170	+ 610	+ 200	+ 1 150	- 580	+ 440

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

BRAKE SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ANTISKID FAULT	FULL	0	**1 870**	+ 70	+ 100	+ 60	+ 190	+ 70	+ 80	- 60	+ 660
	3	6	**2 070**	+ 70	+ 100	+ 70	+ 210	+ 70	+ 90	- 80	+ 790
AUTO BRK FAULT	FULL	0	**1 180**	+ 40	+ 70	+ 40	+ 120	+ 30	+ 20	- 20	+ 770
	3	6	**1 260**	+ 40	+ 70	+ 40	+ 120	+ 40	+ 30	- 20	+ 920
ONE TIRE DAMAGE	FULL	0	**1 300**	+ 50	+ 90	+ 50	+ 150	+ 40	+ 30	- 20	+ 720
	3	6	**1 430**	+ 50	+ 90	+ 50	+ 150	+ 50	+ 40	- 30	+ 870
TWO TIRES DAMAGE	FULL	0	**1 610**	+ 60	+ 100	+ 60	+ 190	+ 60	+ 70	- 50	+ 670
	3	6	**1 790**	+ 70	+ 110	+ 70	+ 200	+ 70	+ 80	- 60	+ 810

(1) Automatic Landing correction: add 170m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ANTISKID FAULT	FULL	0	**1 870**	+ 60	+ 110	+ 70	+ 220	+ 70	+ 90	- 70	+ 600
	3	6	**2 070**	+ 70	+ 120	+ 80	+ 240	+ 80	+ 100	- 80	+ 710
AUTO BRK FAULT	FULL	0	**1 560**	+ 50	+ 120	+ 80	+ 230	+ 70	+ 60	- 40	+ 550
	3	6	**1 740**	+ 50	+ 130	+ 90	+ 250	+ 80	+ 80	- 60	+ 660
ONE TIRE DAMAGE	FULL	0	**1 660**	+ 50	+ 120	+ 90	+ 250	+ 70	+ 70	- 60	+ 530
	3	6	**1 860**	+ 60	+ 140	+ 100	+ 280	+ 90	+ 90	- 70	+ 620
TWO TIRES DAMAGE	FULL	0	**1 990**	+ 70	+ 140	+ 100	+ 310	+ 90	+ 130	- 100	+ 470
	3	6	**2 260**	+ 70	+ 160	+ 120	+ 350	+ 110	+ 160	- 130	+ 550

(1) Automatic Landing correction: add 180m - (2) Weight correction: subtract 20m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ANTISKID FAULT	FULL	0	**1 890**	+ 60	+ 100	+ 60	+ 200	+ 70	+ 80	- 90	+ 660
	3	6	**2 080**	+ 70	+ 110	+ 70	+ 210	+ 70	+ 100	- 100	+ 790
AUTO BRK FAULT	FULL	0	**1 710**	+ 40	+ 100	+ 60	+ 190	+ 60	+ 80	- 70	+ 660
	3	6	**1 880**	+ 40	+ 100	+ 70	+ 200	+ 60	+ 90	- 90	+ 800
ONE TIRE DAMAGE	FULL	0	**1 970**	+ 40	+ 100	+ 70	+ 230	+ 70	+ 120	- 110	+ 610
	3	6	**2 180**	+ 40	+ 110	+ 80	+ 250	+ 80	+ 140	- 130	+ 740
TWO TIRES DAMAGE	FULL	0	**2 410**	+ 50	+ 120	+ 90	+ 310	+ 90	+ 220	- 180	+ 550
	3	6	**2 700**	+ 50	+ 130	+ 100	+ 330	+ 110	+ 260	- 220	+ 650

(1) Automatic Landing correction: add 180m - (2) Weight correction: subtract 20m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

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BRAKE SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

3 - MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ANTISKID FAULT	FULL	0	**2 070**	+ 40	+ 100	+ 70	+ 230	+ 70	+ 120	- 110	+ 620
	3	6	**2 290**	+ 40	+ 110	+ 80	+ 240	+ 80	+ 140	- 140	+ 750
AUTO BRK FAULT	FULL	0	**1 910**	+ 40	+ 110	+ 70	+ 220	+ 70	+ 110	- 100	+ 620
	3	6	**2 110**	+ 40	+ 120	+ 80	+ 230	+ 80	+ 130	- 120	+ 750
ONE TIRE DAMAGE	FULL	0	**2 210**	+ 50	+ 110	+ 80	+ 280	+ 80	+ 170	- 140	+ 570
	3	6	**2 460**	+ 50	+ 130	+ 100	+ 290	+ 90	+ 200	- 180	+ 690
TWO TIRES DAMAGE	FULL	0	**2 700**	+ 60	+ 130	+ 110	+ 370	+ 110	+ 320	- 230	+ 510
	3	6	**3 050**	+ 60	+ 150	+ 120	+ 390	+ 130	+ 390	- 290	+ 610

(1) Automatic Landing correction: add 180m - (2) Weight correction: subtract 20m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ANTISKID FAULT	FULL	0	**2 230**	+ 70	+ 150	+ 120	+ 370	+ 110	+ 170	- 120	+ 430
	3	6	**2 580**	+ 80	+ 180	+ 140	+ 420	+ 130	+ 220	- 160	+ 510
AUTO BRK FAULT	FULL	0	**2 170**	+ 70	+ 160	+ 120	+ 370	+ 110	+ 160	- 110	+ 420
	3	6	**2 510**	+ 80	+ 180	+ 140	+ 420	+ 130	+ 220	- 140	+ 500
ONE TIRE DAMAGE	FULL	0	**2 460**	+ 80	+ 160	+ 130	+ 420	+ 120	+ 230	- 160	+ 390
	3	6	**2 850**	+ 90	+ 200	+ 160	+ 480	+ 160	+ 310	- 200	+ 450
TWO TIRES DAMAGE	FULL	0	**2 930**	+ 90	+ 170	+ 150	+ 520	+ 150	+ 400	- 250	+ 350
	3	6	**3 430**	+ 110	+ 200	+ 180	+ 600	+ 190	+ 540	- 320	+ 390

(1) Automatic Landing correction: add 190m - (2) Weight correction: subtract 30m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ANTISKID FAULT	FULL	0	**3 030**	+ 60	+ 140	+ 120	+ 430	+ 130	+ 450	- 300	+ 480
	3	6	**3 460**	+ 70	+ 150	+ 140	+ 460	+ 140	+ 550	- 370	+ 580
AUTO BRK FAULT	FULL	0	**2 950**	+ 60	+ 140	+ 120	+ 420	+ 130	+ 440	- 290	+ 480
	3	6	**3 370**	+ 70	+ 150	+ 130	+ 460	+ 140	+ 550	- 360	+ 570
ONE TIRE DAMAGE	FULL	0	**3 390**	+ 70	+ 150	+ 130	+ 530	+ 160	+ 770	- 400	+ 430
	3	6	**3 910**	+ 80	+ 170	+ 150	+ 570	+ 180	+ 950	- 500	+ 510
TWO TIRES DAMAGE	FULL	0	Landing Distance greater than 6 000 m for all conditions								
	3	6	Landing Distance greater than 6 000 m for all conditions								

(1) Automatic Landing correction: add 190m - (2) Weight correction: subtract 30m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 2 880m

ELECTRICAL SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
AC BUS 1 FAULT	FULL	0	**1 140**	+ 40	+ 70	+ 40	+ 130	+ 40	+ 20	- 10	+ 780
	3	6	**1 230**	+ 50	+ 80	+ 40	+ 120	+ 50	+ 30	- 20	+ 930
DC BUS 2 FAULT	FULL	0	**1 250**	+ 40	+ 90	+ 40	+ 120	+ 40	+ 30	- 20	+ 820
	3	6	**1 320**	+ 40	+ 90	+ 50	+ 130	+ 40	+ 30	- 30	+ 970
DC BUS 1+2 FAULT	FULL	0	**2 040**	+ 80	+ 110	+ 70	+ 210	+ 70	+ 110	INOP	+ 740
	3	6	**2 240**	+ 80	+ 120	+ 80	+ 230	+ 70	+ 120	INOP	+ 880
DC ESS BUS FAULT with no Ice Accretion	FULL	0	**1 140**	+ 40	+ 70	+ 40	+ 130	+ 40	+ 20	- 10	+ 780
	3	6	**1 230**	+ 50	+ 90	+ 50	+ 120	+ 50	+ 30	- 20	+ 930
DC ESS BUS FAULT with Ice Accretion	FULL	10	**1 270**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 20	- 20	+ 610
	3	16	**1 380**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 780
DC ESS SHED BUS with Ice Accretion	FULL	10	**1 260**	+ 40	+ 70	+ 50	+ 130	+ 40	+ 20	- 10	+ 600
	3	16	**1 370**	+ 50	+ 80	+ 50	+ 120	+ 40	+ 30	- 20	+ 770
DC EMER CONFIG (Calculated with 140kt min)	FULL	0 / 140kt	**2 130**	+ 70	+ 110	+ 70	+ 220	+ 70	+ 110	INOP	+ 670
	3	6 / 140kt	**2 250**	+ 80	+ 120	+ 80	+ 230	+ 70	+ 120	INOP	+ 880
ELEC EMER CONFIG (Calculated with 140kt min)	3	10 / 140kt	**2 280**	+ 80	+ 120	+ 80	+ 220	+ 80	+ 110	INOP	+ 820

(1) Automatic Landing correction: add 180m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
AC BUS 1 FAULT	FULL	0	**1 510**	+ 50	+ 120	+ 70	+ 220	+ 70	+ 60	- 40	+ 580
	3	6	**1 680**	+ 50	+ 130	+ 90	+ 240	+ 80	+ 70	- 60	+ 690
DC BUS 2 FAULT	FULL	0	**1 750**	+ 60	+ 170	+ 100	+ 270	+ 80	+ 100	- 80	+ 580
	3	6	**1 920**	+ 60	+ 180	+ 110	+ 290	+ 100	+ 110	- 90	+ 700
DC BUS 1+2 FAULT	FULL	0	**2 120**	+ 70	+ 160	+ 100	+ 290	+ 90	+ 150	INOP	+ 600
	3	6	**2 340**	+ 80	+ 180	+ 110	+ 310	+ 100	+ 170	INOP	+ 720
DC ESS BUS FAULT with no Ice Accretion	FULL	0	**1 520**	+ 50	+ 120	+ 80	+ 230	+ 60	+ 60	- 40	+ 570
	3	6	**1 690**	+ 50	+ 140	+ 90	+ 250	+ 80	+ 70	- 60	+ 680
DC ESS BUS FAULT with Ice Accretion	FULL	10	**1 700**	+ 50	+ 130	+ 90	+ 240	+ 80	+ 70	- 60	+ 450
	3	16	**1 900**	+ 60	+ 130	+ 100	+ 260	+ 80	+ 80	- 80	+ 560
DC ESS SHED BUS with Ice Accretion	FULL	10	**1 640**	+ 50	+ 110	+ 80	+ 220	+ 70	+ 60	- 40	+ 450
	3	16	**1 820**	+ 50	+ 120	+ 90	+ 240	+ 80	+ 70	- 60	+ 570
DC EMER CONFIG (Calculated with 140kt min)	FULL	0 / 140kt	**2 230**	+ 60	+ 160	+ 110	+ 300	+ 90	+ 150	INOP	+ 530
	3	6 / 140kt	**2 350**	+ 80	+ 180	+ 110	+ 310	+ 100	+ 170	INOP	+ 710
ELEC EMER CONFIG (Calculated with 140kt min)	3	10 / 140kt	**2 390**	+ 80	+ 170	+ 110	+ 300	+ 110	+ 160	INOP	+ 670

(1) Automatic Landing correction: add 190m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

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ELECTRICAL SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
AC BUS 1 FAULT	FULL	0	**1 760**	+ 40	+ 100	+ 70	+ 200	+ 60	+ 80	- 70	+ 670
	3	6	**1 930**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 90	- 90	+ 800
DC BUS 2 FAULT	FULL	0	**2 040**	+ 40	+ 140	+ 80	+ 220	+ 80	+ 130	- 140	+ 670
	3	6	**2 210**	+ 40	+ 140	+ 80	+ 230	+ 80	+ 140	- 160	+ 820
DC BUS 1+2 FAULT	FULL	0	**2 240**	+ 50	+ 140	+ 80	+ 240	+ 80	+ 150	INOP	+ 680
	3	6	**2 440**	+ 60	+ 150	+ 90	+ 250	+ 80	+ 170	INOP	+ 820
DC ESS BUS FAULT with no Ice Accretion	FULL	0	**1 790**	+ 40	+ 110	+ 70	+ 200	+ 60	+ 90	- 110	+ 660
	3	6	**1 970**	+ 40	+ 110	+ 70	+ 220	+ 70	+ 100	- 130	+ 800
DC ESS BUS FAULT with Ice Accretion	FULL	10	**1 970**	+ 40	+ 100	+ 70	+ 210	+ 60	+ 100	- 120	+ 520
	3	16	**2 150**	+ 40	+ 110	+ 80	+ 210	+ 80	+ 110	- 150	+ 670
DC ESS SHED BUS with Ice Accretion	FULL	10	**1 870**	+ 40	+ 90	+ 70	+ 200	+ 60	+ 80	- 80	+ 530
	3	16	**2 050**	+ 40	+ 90	+ 80	+ 200	+ 70	+ 90	- 90	+ 670
DC EMER CONFIG (Calculated with 140kt min)	FULL	0 / 140kt	**2 350**	+ 40	+ 140	+ 90	+ 240	+ 80	+ 160	INOP	+ 610
	3	6 / 140kt	**2 440**	+ 60	+ 150	+ 90	+ 240	+ 90	+ 170	INOP	+ 820
ELEC EMER CONFIG (Calculated with 140kt min)	3	10 / 140kt	**2 470**	+ 60	+ 140	+ 90	+ 240	+ 90	+ 150	INOP	+ 770

(1) Automatic Landing correction: add 190m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

3 - MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
AC BUS 1 FAULT	FULL	0	**1 970**	+ 40	+ 110	+ 70	+ 230	+ 70	+ 120	- 100	+ 630
	3	6	**2 180**	+ 40	+ 120	+ 80	+ 240	+ 80	+ 140	- 120	+ 750
DC BUS 2 FAULT	FULL	0	**2 330**	+ 50	+ 150	+ 90	+ 270	+ 80	+ 190	- 200	+ 630
	3	6	**2 530**	+ 50	+ 160	+ 100	+ 280	+ 90	+ 210	- 230	+ 770
DC BUS 1+2 FAULT	FULL	0	**2 520**	+ 50	+ 160	+ 90	+ 280	+ 90	+ 220	INOP	+ 640
	3	6	**2 760**	+ 50	+ 170	+ 100	+ 300	+ 90	+ 240	INOP	+ 780
DC ESS BUS FAULT with no Ice Accretion	FULL	0	**2 030**	+ 40	+ 120	+ 80	+ 240	+ 70	+ 130	- 170	+ 620
	3	6	**2 250**	+ 40	+ 120	+ 90	+ 260	+ 80	+ 160	- 200	+ 750
DC ESS BUS FAULT with Ice Accretion	FULL	10	**2 220**	+ 40	+ 110	+ 80	+ 250	+ 80	+ 140	- 180	+ 490
	3	16	**2 450**	+ 40	+ 120	+ 90	+ 260	+ 90	+ 160	- 220	+ 630
DC ESS SHED BUS with Ice Accretion	FULL	10	**2 080**	+ 40	+ 100	+ 80	+ 230	+ 80	+ 110	- 110	+ 500
	3	16	**2 300**	+ 40	+ 110	+ 90	+ 240	+ 80	+ 130	- 130	+ 630
DC EMER CONFIG (Calculated with 140kt min)	FULL	0 / 140kt	**2 630**	+ 30	+ 160	+ 100	+ 280	+ 100	+ 230	INOP	+ 570
	3	6 / 140kt	**2 760**	+ 50	+ 170	+ 100	+ 290	+ 100	+ 240	INOP	+ 780
ELEC EMER CONFIG (Calculated with 140kt min)	3	10 / 140kt	**2 760**	+ 50	+ 160	+ 100	+ 280	+ 100	+ 210	INOP	+ 720

(1) Automatic Landing correction: add 200m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

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ELECTRICAL SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
AC BUS 1 FAULT	FULL	0	**2 250**	+ 70	+ 170	+ 120	+ 380	+ 120	+ 180	- 120	+ 430
	3	6	**2 600**	+ 80	+ 200	+ 150	+ 430	+ 150	+ 240	- 150	+ 500
DC BUS 2 FAULT	FULL	0	**2 730**	+ 90	+ 250	+ 170	+ 500	+ 160	+ 330	- 240	+ 420
	3	6	**3 150**	+ 100	+ 280	+ 200	+ 570	+ 190	+ 440	- 300	+ 490
DC BUS 1+2 FAULT	FULL	0	**2 860**	+ 90	+ 260	+ 180	+ 540	+ 160	+ 380	INOP	+ 410
	3	6	**3 320**	+ 100	+ 290	+ 220	+ 630	+ 190	+ 510	INOP	+ 480
DC ESS BUS FAULT with no Ice Accretion	FULL	0	**2 330**	+ 80	+ 180	+ 140	+ 420	+ 120	+ 210	- 190	+ 400
	3	6	**2 700**	+ 90	+ 220	+ 170	+ 490	+ 150	+ 280	- 240	+ 460
DC ESS BUS FAULT with Ice Accretion	FULL	10	**2 600**	+ 80	+ 170	+ 150	+ 430	+ 130	+ 230	- 220	+ 340
	3	16	**3 020**	+ 90	+ 200	+ 180	+ 500	+ 160	+ 310	- 300	+ 410
DC ESS SHED BUS with Ice Accretion	FULL	10	**2 410**	+ 70	+ 150	+ 130	+ 370	+ 120	+ 170	- 130	+ 360
	3	16	**2 790**	+ 80	+ 160	+ 150	+ 420	+ 140	+ 230	- 170	+ 440
DC EMER CONFIG (Calculated with 140kt min)	FULL	0 / 140kt	**3 020**	+ 70	+ 250	+ 190	+ 540	+ 170	+ 390	INOP	+ 380
	3	6 / 140kt	**3 320**	+ 100	+ 300	+ 220	+ 620	+ 200	+ 510	INOP	+ 480
ELEC EMER CONFIG (Calculated with 140kt min)	3	10 / 140kt	**3 300**	+ 100	+ 260	+ 190	+ 540	+ 200	+ 420	INOP	+ 500

(1) Automatic Landing correction: add 220m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
AC BUS 1 FAULT	FULL	0	**3 690**	+ 70	+ 150	+ 140	+ 580	+ 170	+ 1 010	- 360	+ 420
	3	6	**4 260**	+ 80	+ 180	+ 170	+ 620	+ 200	+ 1 250	- 480	+ 500
DC BUS 2 FAULT	FULL	0	Landing Distance greater than 6 000 m for all conditions								
	3	6	Landing Distance greater than 6 000 m for all conditions								
DC BUS 1+2 FAULT	FULL	0	Landing Distance greater than 6 000 m for all conditions								
	3	6	Landing Distance greater than 6 000 m for all conditions								
DC ESS BUS FAULT with no Ice Accretion	FULL	0	Landing Distance greater than 6 000 m for all conditions								
	3	6	Landing Distance greater than 6 000 m for all conditions								
DC ESS BUS FAULT with Ice Accretion	FULL	10	Landing Distance greater than 6 000 m for all conditions								
	3	16	Landing Distance greater than 6 000 m for all conditions								
DC ESS SHED BUS with Ice Accretion	FULL	10	**3 770**	+ 70	+ 140	+ 150	+ 570	+ 170	+ 930	- 450	+ 360
	3	16	**4 360**	+ 80	+ 160	+ 170	+ 610	+ 200	+ 1 150	- 580	+ 440
DC EMER CONFIG (Calculated with 140kt min)	FULL	0 / 140kt	Landing Distance greater than 6 000 m for all conditions								
	3	6 / 140kt	Landing Distance greater than 6 000 m for all conditions								
ELEC EMER CONFIG (Calculated with 140kt min)	3	10 / 140kt	Landing Distance greater than 6 000 m for all conditions								

(1) Automatic Landing correction: add 220m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

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ENGINE SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
REV UNLOCK with buffet	3	10	**1 260**	+ 50	+ 80	+ 50	+ 120	+ 40	+ 30	- 10	+ 840
	1	40	**1 710**	+ 50	N/A	+ 60	+ 130	+ 50	+ 30	- 20	+ 790
SHUTDOWN with ENG FIRE pushbutton pushed and Ice Accretion	FULL	10	**1 240**	+ 40	+ 70	+ 50	+ 120	+ 40	+ 20	- 10	+ 600
	3	16	**1 340**	+ 50	+ 80	+ 50	+ 120	+ 50	+ 30	- 20	+ 760

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
REV UNLOCK with buffet	3	10	**1 660**	+ 50	+ 120	+ 90	+ 230	+ 70	+ 60	- 50	+ 610
	1	40	**2 260**	+ 60	N/A	+ 110	+ 250	+ 100	+ 80	- 80	+ 580
SHUTDOWN with ENG FIRE pushbutton pushed and Ice Accretion	FULL	10	**1 600**	+ 50	+ 110	+ 80	+ 220	+ 70	+ 50	- 40	+ 440
	3	16	**1 770**	+ 50	+ 120	+ 90	+ 230	+ 80	+ 60	- 60	+ 550

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
REV UNLOCK with buffet	3	10	**1 880**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 80	- 90	+ 730
	1	40	**2 400**	+ 40	N/A	+ 90	+ 200	+ 80	+ 90	- 120	+ 700
SHUTDOWN with ENG FIRE pushbutton pushed and Ice Accretion	FULL	10	**1 810**	+ 40	+ 100	+ 70	+ 190	+ 70	+ 80	- 80	+ 520
	3	16	**1 980**	+ 40	+ 100	+ 70	+ 190	+ 70	+ 80	- 90	+ 660

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

3 - MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
REV UNLOCK with buffet	3	10	**2 110**	+ 40	+ 110	+ 80	+ 230	+ 70	+ 120	- 120	+ 680
	1	40	**2 690**	+ 50	N/A	+ 100	+ 240	+ 90	+ 130	- 160	+ 660
SHUTDOWN with ENG FIRE pushbutton pushed and Ice Accretion	FULL	10	**2 010**	+ 40	+ 100	+ 80	+ 220	+ 70	+ 100	- 110	+ 490
	3	16	**2 220**	+ 40	+ 110	+ 80	+ 230	+ 80	+ 120	- 130	+ 620

(1) Automatic Landing correction: add 140m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

Continued on the next page

ENGINE SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
REV UNLOCK with buffet	3	10	**2 490**	+ 80	+ 180	+ 140	+ 390	+ 130	+ 200	- 150	+ 440
	1	40	**3 410**	+ 100	N/A	+ 180	+ 430	+ 160	+ 260	- 260	+ 460
SHUTDOWN with ENG FIRE pushbutton pushed and Ice Accretion	FULL	10	**2 310**	+ 70	+ 140	+ 120	+ 350	+ 110	+ 160	- 130	+ 340
	3	16	**2 650**	+ 80	+ 170	+ 140	+ 390	+ 140	+ 210	- 170	+ 410

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
REV UNLOCK with buffet	3	10	**3 830**	+ 90	+ 170	+ 150	+ 540	+ 170	+ 830	- 540	+ 440
	1	40	**4 850**	+ 100	N/A	+ 190	+ 580	+ 200	+ 940	- 680	+ 460
SHUTDOWN with ENG FIRE pushbutton pushed and Ice Accretion	FULL	10	**3 470**	+ 80	+ 140	+ 140	+ 510	+ 150	+ 680	- 430	+ 340
	3	16	**3 990**	+ 90	+ 160	+ 160	+ 540	+ 170	+ 830	- 550	+ 410

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 40m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

FLIGHT CONTROLS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY											
Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ONE SPLR FAULT with no SPOILER runaway suspected	FULL	0	**1 170**	+ 40	+ 70	+ 40	+ 120	+ 40	+ 20	- 20	+ 780
	3	6	**1 240**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 930
ONE SPLR FAULT with SPOILER runaway suspected	3	10	**1 300**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 20	- 20	+ 870
TWO SPLR FAULT/ GND SPLR 1+2(3+4) FAULT	FULL	0	**1 210**	+ 40	+ 90	+ 40	+ 120	+ 40	+ 30	- 20	+ 820
	3	6	**1 280**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 970
THREE SPLR FAULT	FULL	0	**1 260**	+ 40	+ 90	+ 40	+ 120	+ 40	+ 30	- 20	+ 830
	3	6	**1 330**	+ 40	+ 90	+ 50	+ 130	+ 40	+ 30	- 30	+ 980
ALL SPLR FAULT	FULL	0	**1 380**	+ 40	+ 120	+ 50	+ 130	+ 50	+ 40	- 40	+ 870
	3	6	**1 440**	+ 40	+ 120	+ 50	+ 130	+ 50	+ 40	- 40	+ 1 030
GND SPLR FAULT	FULL	0	**1 380**	+ 40	+ 120	+ 50	+ 130	+ 50	+ 40	- 40	+ 870
	3	6	**1 440**	+ 40	+ 120	+ 50	+ 130	+ 50	+ 40	- 40	+ 1 030
SEC 1 or SEC 3 FAULT	FULL	0	**1 170**	+ 40	+ 80	+ 40	+ 120	+ 40	+ 20	- 20	+ 800
	3	6	**1 250**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 950
SEC 2 FAULT	FULL	0	**1 140**	+ 40	+ 70	+ 40	+ 130	+ 40	+ 20	- 10	+ 780
	3	6	**1 230**	+ 50	+ 80	+ 40	+ 120	+ 50	+ 30	- 20	+ 930
SEC 2+3 FAULT	FULL	0	**1 250**	+ 40	+ 90	+ 40	+ 120	+ 40	+ 30	- 20	+ 820
	3	6	**1 320**	+ 40	+ 90	+ 50	+ 130	+ 40	+ 30	- 20	+ 970
SEC 1+3 FAULT	FULL	0	**1 310**	+ 40	+ 110	+ 40	+ 120	+ 50	+ 40	- 30	+ 830
	3	6	**1 380**	+ 40	+ 100	+ 50	+ 130	+ 50	+ 30	- 30	+ 990
SEC 1+2 FAULT	FULL	0	**1 200**	+ 40	+ 80	+ 40	+ 120	+ 40	+ 30	- 20	+ 820
	3	6	**1 280**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 970
RUDDER JAM	FULL	0	**1 270**	+ 60	+ 110	+ 60	+ 150	+ 50	+ 40	- 20	+ 670
	3	6	**1 420**	+ 60	+ 110	+ 70	+ 160	+ 60	+ 40	- 20	+ 810
SEC 1+2+3 FAULT	3	10	**1 510**	+ 40	+ 120	+ 50	+ 140	+ 60	+ 50	INOP	+ 960
ALTN LAW/ DIRECT LAW/ ELAC 1+2 FAULT/ L+R ELEV FAULT/ L(R) ELEV FAULT/ STAB JAM	3	10	**1 280**	+ 50	+ 80	+ 50	+ 120	+ 50	+ 30	- 20	+ 850

(1) Automatic Landing correction: add 180m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

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FLIGHT CONTROLS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

5 - GOOD											
Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ONE SPLR FAULT with no SPOILER runaway suspected	FULL	0	**1 560**	+ 50	+ 130	+ 80	+ 230	+ 80	+ 60	- 40	+ 570
	3	6	**1 720**	+ 60	+ 140	+ 90	+ 250	+ 90	+ 80	- 60	+ 680
ONE SPLR FAULT with SPOILER runaway suspected	3	10	**1 810**	+ 60	+ 140	+ 90	+ 260	+ 90	+ 80	- 60	+ 630
TWO SPLR FAULT/ GND SPLR 1+2(3+4) FAULT	FULL	0	**1 670**	+ 60	+ 150	+ 90	+ 250	+ 80	+ 80	- 60	+ 600
	3	6	**1 840**	+ 60	+ 160	+ 100	+ 280	+ 90	+ 100	- 70	+ 720
THREE SPLR FAULT	FULL	0	**1 770**	+ 60	+ 180	+ 100	+ 270	+ 90	+ 100	- 70	+ 600
	3	6	**1 950**	+ 60	+ 180	+ 110	+ 300	+ 90	+ 120	- 90	+ 720
ALL SPLR FAULT	FULL	0	**2 070**	+ 70	+ 260	+ 120	+ 330	+ 110	+ 180	- 120	+ 650
	3	6	**2 240**	+ 80	+ 270	+ 130	+ 350	+ 130	+ 200	- 130	+ 770
GND SPLR FAULT	FULL	0	**2 070**	+ 70	+ 260	+ 120	+ 330	+ 110	+ 180	- 120	+ 650
	3	6	**2 240**	+ 80	+ 270	+ 130	+ 350	+ 130	+ 200	- 130	+ 770
SEC 1 or SEC 3 FAULT	FULL	0	**1 580**	+ 50	+ 130	+ 80	+ 230	+ 70	+ 70	- 50	+ 590
	3	6	**1 760**	+ 60	+ 150	+ 100	+ 260	+ 80	+ 80	- 60	+ 700
SEC 2 FAULT	FULL	0	**1 510**	+ 50	+ 120	+ 70	+ 220	+ 70	+ 60	- 40	+ 580
	3	6	**1 680**	+ 50	+ 130	+ 90	+ 240	+ 80	+ 70	- 50	+ 690
SEC 2+3 FAULT	FULL	0	**1 740**	+ 60	+ 160	+ 90	+ 260	+ 80	+ 90	- 70	+ 590
	3	6	**1 910**	+ 60	+ 180	+ 110	+ 290	+ 90	+ 110	- 80	+ 700
SEC 1+3 FAULT	FULL	0	**1 880**	+ 60	+ 200	+ 100	+ 290	+ 100	+ 130	- 100	+ 600
	3	6	**2 060**	+ 70	+ 220	+ 120	+ 310	+ 110	+ 150	- 120	+ 720
SEC 1+2 FAULT	FULL	0	**1 650**	+ 50	+ 150	+ 90	+ 250	+ 80	+ 80	- 60	+ 600
	3	6	**1 830**	+ 60	+ 170	+ 100	+ 270	+ 90	+ 100	- 80	+ 720
RUDDER JAM	FULL	0	**1 680**	+ 60	+ 140	+ 100	+ 270	+ 80	+ 80	- 60	+ 470
	3	6	**1 920**	+ 70	+ 160	+ 120	+ 300	+ 100	+ 110	- 80	+ 550
SEC 1+2+3 FAULT	3	10	**2 400**	+ 80	+ 270	+ 140	+ 370	+ 130	+ 220	INOP	+ 710
ALTN LAW/ DIRECT LAW/ ELAC 1+2 FAULT/ L+R ELEV FAULT/ L(R) ELEV FAULT/ STAB JAM	3	10	**1 710**	+ 50	+ 120	+ 90	+ 240	+ 70	+ 60	- 50	+ 640
(1) Automatic Landing correction: add 220m - (2) Weight correction: subtract 20m per 1T below 66T											
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m											

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FLIGHT CONTROLS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
ONE SPLR FAULT with no SPOILER runaway suspected	FULL	0	**1 820**	+ 40	+ 110	+ 70	+ 200	+ 70	+ 90	- 90	+ 660
	3	6	**1 980**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 100	- 100	+ 800
ONE SPLR FAULT with SPOILER runaway suspected	3	10	**2 060**	+ 40	+ 110	+ 80	+ 220	+ 70	+ 100	- 110	+ 740
TWO SPLR FAULT/ GND SPLR 1+2(3+4) FAULT	FULL	0	**1 950**	+ 40	+ 120	+ 70	+ 210	+ 70	+ 110	- 110	+ 690
	3	6	**2 100**	+ 40	+ 130	+ 80	+ 220	+ 80	+ 120	- 120	+ 830
THREE SPLR FAULT	FULL	0	**2 060**	+ 40	+ 140	+ 80	+ 220	+ 70	+ 130	- 120	+ 690
	3	6	**2 220**	+ 40	+ 150	+ 80	+ 230	+ 80	+ 140	- 140	+ 830
ALL SPLR FAULT	FULL	0	**2 380**	+ 50	+ 210	+ 90	+ 250	+ 90	+ 210	- 190	+ 740
	3	6	**2 530**	+ 50	+ 210	+ 100	+ 260	+ 100	+ 210	- 200	+ 880
GND SPLR FAULT	FULL	0	**2 380**	+ 50	+ 210	+ 90	+ 250	+ 90	+ 210	- 190	+ 740
	3	6	**2 530**	+ 50	+ 210	+ 100	+ 260	+ 100	+ 210	- 200	+ 880
SEC 1 or SEC 3 FAULT	FULL	0	**1 840**	+ 40	+ 110	+ 70	+ 200	+ 70	+ 90	- 90	+ 680
	3	6	**2 020**	+ 40	+ 120	+ 80	+ 210	+ 70	+ 110	- 110	+ 810
SEC 2 FAULT	FULL	0	**1 760**	+ 40	+ 100	+ 70	+ 200	+ 60	+ 80	- 80	+ 670
	3	6	**1 930**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 90	- 90	+ 800
SEC 2+3 FAULT	FULL	0	**2 020**	+ 40	+ 140	+ 80	+ 220	+ 70	+ 120	- 120	+ 670
	3	6	**2 180**	+ 40	+ 140	+ 80	+ 230	+ 80	+ 130	- 130	+ 820
SEC 1+3 FAULT	FULL	0	**2 180**	+ 40	+ 160	+ 80	+ 230	+ 80	+ 160	- 150	+ 690
	3	6	**2 340**	+ 50	+ 170	+ 90	+ 240	+ 90	+ 170	- 170	+ 840
SEC 1+2 FAULT	FULL	0	**1 920**	+ 40	+ 120	+ 70	+ 210	+ 70	+ 110	- 100	+ 690
	3	6	**2 100**	+ 40	+ 130	+ 80	+ 220	+ 70	+ 120	- 120	+ 830
RUDDER JAM	FULL	0	**1 930**	+ 50	+ 130	+ 90	+ 240	+ 80	+ 110	- 100	+ 550
	3	6	**2 180**	+ 50	+ 140	+ 100	+ 260	+ 90	+ 140	- 130	+ 650
SEC 1+2+3 FAULT	3	10	**2 660**	+ 50	+ 210	+ 100	+ 260	+ 110	+ 230	INOP	+ 820
ALTN LAW/ DIRECT LAW/ ELAC 1+2 FAULT/ L+R ELEV FAULT/ L(R) ELEV FAULT/ STAB JAM	3	10	**1 940**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 90	- 90	+ 740

(1) Automatic Landing correction: add 220m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

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FLIGHT CONTROLS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

3 - MEDIUM											
Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
ONE SPLR FAULT with no SPOILER runaway suspected	FULL	0	**2 040**	+ 40	+ 120	+ 80	+ 230	+ 80	+ 130	- 120	+ 620
	3	6	**2 240**	+ 40	+ 120	+ 90	+ 250	+ 80	+ 150	- 140	+ 750
ONE SPLR FAULT with SPOILER runaway suspected	3	10	**2 320**	+ 50	+ 130	+ 90	+ 250	+ 90	+ 150	- 150	+ 700
TWO SPLR FAULT/ GND SPLR 1+2(3+4) FAULT	FULL	0	**2 200**	+ 50	+ 140	+ 80	+ 250	+ 80	+ 160	- 140	+ 650
	3	6	**2 390**	+ 50	+ 150	+ 90	+ 260	+ 90	+ 180	- 170	+ 780
THREE SPLR FAULT	FULL	0	**2 330**	+ 50	+ 160	+ 90	+ 260	+ 90	+ 190	- 170	+ 650
	3	6	**2 530**	+ 50	+ 170	+ 100	+ 270	+ 100	+ 210	- 190	+ 780
ALL SPLR FAULT	FULL	0	**2 730**	+ 50	+ 230	+ 110	+ 300	+ 110	+ 300	- 260	+ 700
	3	6	**2 920**	+ 60	+ 230	+ 120	+ 300	+ 120	+ 310	- 280	+ 840
GND SPLR FAULT	FULL	0	**2 730**	+ 50	+ 230	+ 110	+ 300	+ 110	+ 300	- 260	+ 700
	3	6	**2 920**	+ 60	+ 230	+ 120	+ 300	+ 120	+ 310	- 280	+ 840
SEC 1 or SEC 3 FAULT	FULL	0	**2 080**	+ 40	+ 120	+ 80	+ 240	+ 70	+ 130	- 120	+ 640
	3	6	**2 290**	+ 50	+ 130	+ 90	+ 250	+ 80	+ 150	- 150	+ 770
SEC 2 FAULT	FULL	0	**1 970**	+ 40	+ 110	+ 70	+ 230	+ 70	+ 120	- 110	+ 630
	3	6	**2 180**	+ 40	+ 120	+ 80	+ 240	+ 80	+ 140	- 130	+ 750
SEC 2+3 FAULT	FULL	0	**2 280**	+ 50	+ 150	+ 90	+ 260	+ 90	+ 180	- 160	+ 640
	3	6	**2 480**	+ 50	+ 160	+ 90	+ 270	+ 100	+ 190	- 180	+ 770
SEC 1+3 FAULT	FULL	0	**2 480**	+ 50	+ 180	+ 100	+ 280	+ 100	+ 220	- 200	+ 650
	3	6	**2 680**	+ 50	+ 190	+ 100	+ 280	+ 110	+ 240	- 230	+ 790
SEC 1+2 FAULT	FULL	0	**2 170**	+ 50	+ 130	+ 80	+ 250	+ 80	+ 150	- 130	+ 650
	3	6	**2 390**	+ 50	+ 140	+ 90	+ 260	+ 90	+ 180	- 160	+ 780
RUDDER JAM	FULL	0	**2 160**	+ 50	+ 130	+ 100	+ 280	+ 90	+ 150	- 130	+ 510
	3	6	**2 450**	+ 60	+ 150	+ 120	+ 300	+ 100	+ 190	- 170	+ 600
SEC 1+2+3 FAULT	3	10	**3 070**	+ 60	+ 240	+ 120	+ 310	+ 130	+ 330	INOP	+ 780
ALTN LAW/ DIRECT LAW/ ELAC 1+2 FAULT/ L+R ELEV FAULT/ L(R) ELEV FAULT/ STAB JAM	3	10	**2 190**	+ 40	+ 110	+ 80	+ 240	+ 80	+ 130	- 120	+ 700

(1) Automatic Landing correction: add 220m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

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FLIGHT CONTROLS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
ONE SPLR FAULT with no SPOILER runaway suspected	FULL	0	**2 330**	+ 80	+ 180	+ 130	+ 390	+ 120	+ 200	- 140	+ 420
	3	6	**2 680**	+ 90	+ 210	+ 160	+ 450	+ 150	+ 260	- 170	+ 500
ONE SPLR FAULT with SPOILER runaway suspected	3	10	**2 810**	+ 90	+ 200	+ 160	+ 450	+ 160	+ 270	- 180	+ 470
TWO SPLR FAULT/ GND SPLR 1+2(3+4) FAULT	FULL	0	**2 580**	+ 90	+ 220	+ 150	+ 450	+ 140	+ 270	- 170	+ 440
	3	6	**2 960**	+ 100	+ 250	+ 180	+ 510	+ 180	+ 360	- 210	+ 530
THREE SPLR FAULT	FULL	0	**2 750**	+ 90	+ 250	+ 170	+ 490	+ 160	+ 330	- 200	+ 450
	3	6	**3 170**	+ 110	+ 280	+ 200	+ 560	+ 190	+ 440	- 250	+ 530
ALL SPLR FAULT	FULL	0	**3 390**	+ 120	+ 370	+ 220	+ 640	+ 220	+ 660	- 320	+ 500
	3	6	**3 870**	+ 130	+ 410	+ 260	+ 710	+ 270	+ 860	- 380	+ 590
GND SPLR FAULT	FULL	0	**3 390**	+ 120	+ 370	+ 220	+ 640	+ 220	+ 660	- 320	+ 500
	3	6	**3 870**	+ 130	+ 410	+ 260	+ 710	+ 270	+ 860	- 380	+ 590
SEC 1 or SEC 3 FAULT	FULL	0	**2 400**	+ 80	+ 190	+ 140	+ 420	+ 130	+ 220	- 140	+ 440
	3	6	**2 780**	+ 90	+ 220	+ 160	+ 470	+ 160	+ 290	- 180	+ 510
SEC 2 FAULT	FULL	0	**2 250**	+ 70	+ 170	+ 120	+ 380	+ 120	+ 180	- 120	+ 430
	3	6	**2 600**	+ 80	+ 200	+ 150	+ 430	+ 150	+ 240	- 160	+ 500
SEC 2+3 FAULT	FULL	0	**2 670**	+ 90	+ 240	+ 160	+ 470	+ 160	+ 300	- 190	+ 440
	3	6	**3 070**	+ 100	+ 270	+ 190	+ 530	+ 190	+ 400	- 230	+ 520
SEC 1+3 FAULT	FULL	0	**2 960**	+ 100	+ 280	+ 180	+ 530	+ 180	+ 420	- 240	+ 450
	3	6	**3 410**	+ 110	+ 320	+ 220	+ 610	+ 210	+ 560	- 310	+ 530
SEC 1+2 FAULT	FULL	0	**2 540**	+ 90	+ 210	+ 150	+ 450	+ 140	+ 260	- 160	+ 450
	3	6	**2 940**	+ 100	+ 250	+ 180	+ 510	+ 180	+ 350	- 210	+ 520
RUDDER JAM	FULL	0	**2 390**	+ 90	+ 180	+ 150	+ 420	+ 130	+ 220	- 150	+ 350
	3	6	**2 830**	+ 100	+ 210	+ 180	+ 500	+ 170	+ 320	- 200	+ 390
SEC 1+2+3 FAULT	3	10	**4 110**	+ 130	+ 400	+ 270	+ 720	+ 280	+ 910	INOP	+ 550
ALTN LAW/ DIRECT LAW/ ELAC 1+2 FAULT/ L+R ELEV FAULT/ L(R) ELEV FAULT/ STAB JAM	3	10	**2 620**	+ 80	+ 180	+ 150	+ 420	+ 140	+ 220	- 150	+ 470

(1) Automatic Landing correction: add 270m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

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FLIGHT CONTROLS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
ONE SPLR FAULT with no SPOILER runaway suspected	FULL	0	**3 820**	+ 70	+ 160	+ 150	+ 600	+ 170	+ 1 090	- 510	+ 420
	3	6	**4 400**	+ 80	+ 180	+ 170	+ 640	+ 200	+ 1 340	- 640	+ 500
ONE SPLR FAULT with SPOILER runaway suspected	3	10	**4 520**	+ 80	+ 180	+ 180	+ 640	+ 210	+ 1 340	- 650	+ 470
TWO SPLR FAULT/ GND SPLR 1+2(3+4) FAULT	FULL	0	**4 300**	+ 80	+ 190	+ 170	+ 640	+ 200	+ 1 390	- 640	+ 450
	3	6	**4 900**	+ 90	+ 220	+ 190	+ 670	+ 240	+ 1 660	- 790	+ 530
THREE SPLR FAULT	FULL	0	**4 600**	+ 80	+ 220	+ 180	+ 660	+ 220	+ 1 590	- 730	+ 450
	3	6	**5 250**	+ 90	+ 240	+ 200	+ 700	+ 250	+ 1 930	- 890	+ 530
ALL SPLR FAULT	FULL	0	Landing Distance greater than 6 000 m for all conditions								
	3	6	Landing Distance greater than 6 000 m for all conditions								
GND SPLR FAULT	FULL	0	Landing Distance greater than 6 000 m for all conditions								
	3	6	Landing Distance greater than 6 000 m for all conditions								
SEC 1 or SEC 3 FAULT	FULL	0	**3 970**	+ 80	+ 170	+ 150	+ 610	+ 190	+ 1 170	- 550	+ 440
	3	6	**4 580**	+ 80	+ 200	+ 180	+ 650	+ 220	+ 1 450	- 690	+ 510
SEC 2 FAULT	FULL	0	**3 690**	+ 70	+ 150	+ 140	+ 580	+ 170	+ 1 010	- 470	+ 420
	3	6	**4 260**	+ 80	+ 180	+ 170	+ 620	+ 200	+ 1 250	- 600	+ 500
SEC 2+3 FAULT	FULL	0	**4 450**	+ 80	+ 200	+ 170	+ 650	+ 210	+ 1 490	- 680	+ 440
	3	6	**5 080**	+ 90	+ 230	+ 200	+ 690	+ 240	+ 1 800	- 840	+ 520
SEC 1+3 FAULT	FULL	0	Landing Distance greater than 6 000 m for all conditions								
	3	6	Landing Distance greater than 6 000 m for all conditions								
SEC 1+2 FAULT	FULL	0	**4 230**	+ 80	+ 190	+ 170	+ 630	+ 200	+ 1 330	- 510	+ 450
	3	6	**4 870**	+ 90	+ 220	+ 190	+ 670	+ 240	+ 1 640	- 670	+ 530
RUDDER JAM	FULL	0	**3 760**	+ 90	+ 170	+ 170	+ 640	+ 190	+ 1 030	- 480	+ 350
	3	6	**4 430**	+ 100	+ 200	+ 210	+ 710	+ 230	+ 1 340	- 620	+ 390
SEC 1+2+3 FAULT	3	10	Landing Distance greater than 6 000 m for all conditions								
ALTN LAW/ DIRECT LAW/ ELAC 1+2 FAULT/ L+R ELEV FAULT/ L(R) ELEV FAULT/ STAB JAM	3	10	**4 200**	+ 80	+ 160	+ 160	+ 610	+ 200	+ 1 150	- 560	+ 470

(1) Automatic Landing correction: add 260m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

HYDRAULIC SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
G SYS LO PR	FULL	0	**1 270**	+ 40	+ 80	+ 40	+ 120	+ 30	+ 30	- 30	+ 790
	3	6	**1 340**	+ 40	+ 80	+ 50	+ 120	+ 40	+ 30	- 30	+ 950
B SYS LO PR	FULL	0	**1 140**	+ 40	+ 70	+ 40	+ 130	+ 40	+ 20	- 10	+ 780
	3	6	**1 230**	+ 50	+ 80	+ 40	+ 120	+ 50	+ 30	- 20	+ 930
Y SYS LO PR	FULL	0	**1 180**	+ 40	+ 80	+ 40	+ 120	+ 40	+ 20	- 20	+ 810
	3	6	**1 260**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 20	- 20	+ 960
G SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**1 370**	+ 30	+ 90	+ 50	+ 130	+ 40	+ 40	- 30	+ 730
	3	6 / 140kt	**1 390**	+ 40	+ 90	+ 50	+ 130	+ 40	+ 30	- 40	+ 960
Y SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**1 290**	+ 30	+ 90	+ 40	+ 130	+ 40	+ 30	- 30	+ 750
	3	6 / 140kt	**1 310**	+ 40	+ 90	+ 50	+ 130	+ 50	+ 30	- 30	+ 980
G + B	3	25	**1 670**	+ 40	N/A	+ 60	+ 130	+ 50	+ 40	- 40	+ 680
G + Y	3	25	**2 630**	+ 80	N/A	+ 90	+ 210	+ 90	+ 130	INOP	+ 590
B + Y	FULL	0	**1 230**	+ 40	+ 80	+ 40	+ 120	+ 30	+ 30	- 20	+ 820
	3	6	**1 310**	+ 40	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 980

(1) Automatic Landing correction: add 170m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
G SYS LO PR	FULL	0	**1 730**	+ 60	+ 140	+ 90	+ 260	+ 80	+ 90	- 70	+ 550
	3	6	**1 910**	+ 60	+ 160	+ 100	+ 280	+ 100	+ 110	- 90	+ 660
B SYS LO PR	FULL	0	**1 510**	+ 50	+ 120	+ 70	+ 220	+ 70	+ 60	- 40	+ 580
	3	6	**1 680**	+ 50	+ 130	+ 90	+ 240	+ 80	+ 70	- 50	+ 690
Y SYS LO PR	FULL	0	**1 600**	+ 50	+ 130	+ 80	+ 240	+ 70	+ 70	- 50	+ 600
	3	6	**1 780**	+ 60	+ 150	+ 100	+ 260	+ 80	+ 90	- 70	+ 700
G SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**1 920**	+ 40	+ 160	+ 100	+ 280	+ 90	+ 110	- 140	+ 500
	3	6 / 140kt	**2 010**	+ 60	+ 180	+ 110	+ 300	+ 100	+ 120	- 150	+ 670
Y SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**1 800**	+ 40	+ 160	+ 100	+ 260	+ 90	+ 90	- 120	+ 550
	3	6 / 140kt	**1 900**	+ 60	+ 170	+ 110	+ 280	+ 90	+ 110	- 130	+ 720
G + B	3	25	**2 520**	+ 70	N/A	+ 130	+ 310	+ 120	+ 150	- 150	+ 470
G + Y	3	25	**2 870**	+ 90	N/A	+ 140	+ 320	+ 130	+ 200	INOP	+ 480
B + Y	FULL	0	**1 700**	+ 60	+ 160	+ 90	+ 260	+ 80	+ 90	- 60	+ 610
	3	6	**1 890**	+ 60	+ 170	+ 110	+ 280	+ 90	+ 110	- 80	+ 720

(1) Automatic Landing correction: add 190m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

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HYDRAULIC SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
G SYS LO PR	FULL	0	**1 880**	+ 40	+ 120	+ 70	+ 200	+ 70	+ 100	- 90	+ 660
	3	6	**2 050**	+ 40	+ 120	+ 80	+ 220	+ 70	+ 110	- 110	+ 800
B SYS LO PR	FULL	0	**1 760**	+ 40	+ 100	+ 70	+ 200	+ 60	+ 80	- 80	+ 670
	3	6	**1 930**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 90	- 90	+ 800
Y SYS LO PR	FULL	0	**1 860**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 100	- 80	+ 680
	3	6	**2 040**	+ 40	+ 120	+ 80	+ 220	+ 70	+ 110	- 100	+ 820
G SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**2 070**	+ 30	+ 120	+ 80	+ 220	+ 70	+ 120	- 130	+ 610
	3	6 / 140kt	**2 140**	+ 40	+ 140	+ 80	+ 220	+ 80	+ 130	- 140	+ 810
Y SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**2 070**	+ 30	+ 130	+ 80	+ 220	+ 80	+ 120	- 140	+ 630
	3	6 / 140kt	**2 170**	+ 40	+ 140	+ 80	+ 230	+ 80	+ 130	- 150	+ 830
G + B	3	25	**2 560**	+ 50	N/A	+ 90	+ 230	+ 90	+ 140	- 140	+ 570
G + Y	3	25	**2 920**	+ 60	N/A	+ 110	+ 240	+ 100	+ 180	INOP	+ 560
B + Y	FULL	0	**1 980**	+ 40	+ 130	+ 70	+ 220	+ 70	+ 120	- 100	+ 690
	3	6	**2 160**	+ 40	+ 140	+ 80	+ 220	+ 80	+ 130	- 120	+ 830

(1) Automatic Landing correction: add 190m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

3 - MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
G SYS LO PR	FULL	0	**2 120**	+ 40	+ 130	+ 80	+ 240	+ 80	+ 140	- 120	+ 620
	3	6	**2 320**	+ 50	+ 130	+ 90	+ 250	+ 80	+ 160	- 150	+ 750
B SYS LO PR	FULL	0	**1 970**	+ 40	+ 110	+ 70	+ 230	+ 70	+ 120	- 110	+ 630
	3	6	**2 180**	+ 40	+ 120	+ 80	+ 240	+ 80	+ 140	- 130	+ 750
Y SYS LO PR	FULL	0	**2 100**	+ 40	+ 120	+ 80	+ 240	+ 80	+ 140	- 100	+ 640
	3	6	**2 310**	+ 50	+ 140	+ 90	+ 250	+ 90	+ 160	- 130	+ 770
G SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**2 330**	+ 30	+ 140	+ 90	+ 260	+ 80	+ 170	- 170	+ 570
	3	6 / 140kt	**2 430**	+ 50	+ 150	+ 90	+ 260	+ 90	+ 180	- 190	+ 760
Y SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**2 340**	+ 30	+ 140	+ 90	+ 260	+ 90	+ 170	- 170	+ 590
	3	6 / 140kt	**2 470**	+ 50	+ 150	+ 100	+ 270	+ 90	+ 190	- 200	+ 780
G + B	3	25	**2 900**	+ 50	N/A	+ 110	+ 270	+ 100	+ 200	- 190	+ 540
G + Y	3	25	**3 260**	+ 60	N/A	+ 120	+ 290	+ 120	+ 250	INOP	+ 530
B + Y	FULL	0	**2 240**	+ 50	+ 140	+ 90	+ 260	+ 80	+ 170	- 120	+ 650
	3	6	**2 460**	+ 50	+ 160	+ 100	+ 260	+ 90	+ 190	- 150	+ 780

(1) Automatic Landing correction: add 190m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

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HYDRAULIC SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
G SYS LO PR	FULL	0	**2 430**	+ 80	+ 200	+ 140	+ 410	+ 130	+ 230	- 150	+ 420
	3	6	**2 810**	+ 90	+ 220	+ 160	+ 480	+ 160	+ 300	- 190	+ 500
B SYS LO PR	FULL	0	**2 250**	+ 70	+ 170	+ 120	+ 380	+ 120	+ 180	- 120	+ 430
	3	6	**2 600**	+ 80	+ 200	+ 150	+ 430	+ 150	+ 240	- 160	+ 500
Y SYS LO PR	FULL	0	**2 430**	+ 80	+ 200	+ 140	+ 420	+ 130	+ 230	- 120	+ 440
	3	6	**2 820**	+ 90	+ 230	+ 170	+ 480	+ 160	+ 310	- 170	+ 510
G SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**2 730**	+ 70	+ 210	+ 160	+ 450	+ 150	+ 290	- 250	+ 400
	3	6 / 140kt	**2 980**	+ 100	+ 250	+ 180	+ 510	+ 180	+ 360	- 310	+ 510
Y SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**2 780**	+ 70	+ 220	+ 160	+ 470	+ 160	+ 300	- 260	+ 420
	3	6 / 140kt	**3 070**	+ 100	+ 260	+ 190	+ 540	+ 180	+ 390	- 340	+ 530
G + B	3	25	**3 660**	+ 100	N/A	+ 200	+ 520	+ 200	+ 410	- 300	+ 390
G + Y	3	25	**4 010**	+ 110	N/A	+ 220	+ 560	+ 220	+ 520	INOP	+ 400
B + Y	FULL	0	**2 630**	+ 90	+ 230	+ 160	+ 460	+ 150	+ 290	- 160	+ 450
	3	6	**3 060**	+ 100	+ 260	+ 190	+ 530	+ 180	+ 390	- 210	+ 530

(1) Automatic Landing correction: add 220m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
G SYS LO PR	FULL	0	**4 000**	+ 80	+ 180	+ 150	+ 610	+ 190	+ 1 190	- 440	+ 420
	3	6	**4 600**	+ 80	+ 210	+ 180	+ 650	+ 220	+ 1 460	- 590	+ 500
B SYS LO PR	FULL	0	**3 690**	+ 70	+ 150	+ 140	+ 580	+ 170	+ 1 010	- 470	+ 420
	3	6	**4 260**	+ 80	+ 180	+ 170	+ 620	+ 200	+ 1 250	- 600	+ 500
Y SYS LO PR	FULL	0	**4 030**	+ 80	+ 180	+ 160	+ 610	+ 190	+ 1 210	0	+ 440
	3	6	Landing Distance greater than 6 000 m for all conditions								
G SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**4 420**	+ 60	+ 190	+ 170	+ 640	+ 210	+ 1 380	- 50	+ 400
	3	6 / 140kt	Landing Distance greater than 6 000 m for all conditions								
Y SYS LO PR with B SYS supplied by the RAT (Calculated with 140kt min)	FULL	0 / 140kt	**4 550**	+ 60	+ 200	+ 180	+ 650	+ 220	+ 1 460	- 80	+ 420
	3	6 / 140kt	Landing Distance greater than 6 000 m for all conditions								
G + B	3	25	Landing Distance greater than 6 000 m for all conditions								
G + Y	3	25	Landing Distance greater than 6 000 m for all conditions								
B + Y	FULL	0	**4 400**	+ 80	+ 210	+ 170	+ 640	+ 210	+ 1 450	- 10	+ 450
	3	6	Landing Distance greater than 6 000 m for all conditions								

(1) Automatic Landing correction: add 210m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

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NAVIGATION SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
IR 1+2+3 FAULT	3	10	**2 230**	+ 50	+ 160	+ 80	+ 220	+ 80	+ 10	- 10	+ 590
UNRELIABLE SPEED INDICATION	3	16	**1 370**	+ 50	+ 80	+ 50	+ 120	+ 40	+ 30	- 20	+ 770
DUAL IR FAULT/ DUAL ADR FAULT/ DUAL RA FAULT/ ADR 1+2+3 FAULT	3	10	**1 280**	+ 50	+ 80	+ 50	+ 120	+ 50	+ 30	- 20	+ 850

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 10m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
IR 1+2+3 FAULT	3	10	**2 230**	+ 50	+ 160	+ 90	+ 220	+ 80	+ 10	- 10	+ 580
UNRELIABLE SPEED INDICATION	3	16	**1 820**	+ 50	+ 120	+ 90	+ 240	+ 80	+ 70	- 60	+ 570
DUAL IR FAULT/ DUAL ADR FAULT/ DUAL RA FAULT/ ADR 1+2+3 FAULT	3	10	**1 710**	+ 50	+ 120	+ 90	+ 240	+ 70	+ 60	- 50	+ 640

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 20m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	**FLAPS LEVER for LDG**	**ΔVREF**	**REF DIST (m) for 66T**	**Per 1T above 66T**	**Per 5kt**	**Per 1000ft above SL**	**Per 5kt TW**	**Per 10°C above ISA**	**Per 1% Down Slope**	**Per Thrust Reverser Operative**	**If OVW PROC applied**
IR 1+2+3 FAULT	3	10	**2 240**	+ 50	+ 160	+ 80	+ 230	+ 80	+ 40	- 10	+ 590
UNRELIABLE SPEED INDICATION	3	16	**2 050**	+ 40	+ 90	+ 80	+ 200	+ 70	+ 90	- 90	+ 670
DUAL IR FAULT/ DUAL ADR FAULT/ DUAL RA FAULT/ ADR 1+2+3 FAULT	3	10	**1 940**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 90	- 90	+ 740

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 20m per 1T below 66T
REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

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NAVIGATION SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

3 - MEDIUM

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
IR 1+2+3 FAULT	3	10	**2 330**	+ 50	+ 160	+ 90	+ 250	+ 90	+ 90	- 40	+ 590
UNRELIABLE SPEED INDICATION	3	16	**2 300**	+ 40	+ 110	+ 90	+ 240	+ 80	+ 130	- 130	+ 630
DUAL IR FAULT/ DUAL ADR FAULT/ DUAL RA FAULT/ ADR 1+2+3 FAULT	3	10	**2 190**	+ 40	+ 110	+ 80	+ 240	+ 80	+ 130	- 120	+ 700

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
IR 1+2+3 FAULT	3	10	**2 620**	+ 80	+ 180	+ 150	+ 420	+ 140	+ 220	- 60	+ 470
UNRELIABLE SPEED INDICATION	3	16	**2 790**	+ 80	+ 160	+ 150	+ 420	+ 140	+ 230	- 170	+ 440
DUAL IR FAULT/ DUAL ADR FAULT/ DUAL RA FAULT/ ADR 1+2+3 FAULT	3	10	**2 620**	+ 80	+ 180	+ 150	+ 420	+ 140	+ 220	- 150	+ 470

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

1 - POOR

Corrections on Landing Distance (m)				WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE	FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
IR 1+2+3 FAULT	3	10	**4 200**	+ 80	+ 160	+ 160	+ 610	+ 200	+ 1 150	- 550	+ 470
UNRELIABLE SPEED INDICATION	3	16	**4 360**	+ 80	+ 160	+ 170	+ 610	+ 200	+ 1 150	- 580	+ 440
DUAL IR FAULT/ DUAL ADR FAULT/ DUAL RA FAULT/ ADR 1+2+3 FAULT	3	10	**4 200**	+ 80	+ 160	+ 160	+ 610	+ 200	+ 1 150	- 560	+ 470

(1) Automatic Landing correction: add 150m - (2) Weight correction: subtract 40m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

SLATS AND FLAPS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

6 - DRY

Corrections on Landing Distance (m)					WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE		FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
FLAPS FAULT	FLAPS<1	3	25	**1 570**	+ 50	N/A	+ 50	+ 130	+ 50	+ 30	- 20	+ 1 350
	1≤FLAPS<2	3	15	**1 390**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 1 080
	2≤FLAPS<3	3	10	**1 300**	+ 50	+ 80	+ 50	+ 130	+ 50	+ 30	- 10	+ 1 000
	FLAPS=3	3	10	**1 280**	+ 50	+ 80	+ 50	+ 120	+ 50	+ 30	- 20	+ 850
	FLAPS>3	FULL	5	**1 190**	+ 40	+ 80	+ 50	+ 120	+ 40	+ 20	- 10	+ 680
SLATS FAULT	SLATS<1	3	25	**1 500**	+ 50	N/A	+ 50	+ 130	+ 50	+ 30	- 20	+ 660
	1≤SLATS≤3	3	10	**1 280**	+ 50	+ 80	+ 50	+ 120	+ 50	+ 30	- 20	+ 850
	SLATS>3	3	5	**1 220**	+ 40	+ 80	+ 50	+ 130	+ 40	+ 30	- 10	+ 930
FLAPS AND SLATS AT 0		1	50	**1 950**	+ 60	N/A	+ 60	+ 140	+ 60	+ 40	- 30	+ 1 020
FLAPS<1	SLATS<1	3	45	**1 870**	+ 60	N/A	+ 60	+ 130	+ 60	+ 40	- 30	+ 1 080
	SLATS≥1	3	25	**1 570**	+ 50	N/A	+ 50	+ 130	+ 50	+ 30	- 20	+ 1 350
1≤FLAPS<2	SLATS<1	3	30	**1 600**	+ 50	N/A	+ 50	+ 130	+ 50	+ 30	- 20	+ 910
	SLATS≥1	3	15	**1 390**	+ 50	+ 80	+ 50	+ 130	+ 40	+ 30	- 20	+ 1 080
2≤FLAPS<3	SLATS<1	3	25	**1 520**	+ 50	N/A	+ 50	+ 130	+ 50	+ 30	- 20	+ 820
	SLATS≥1	3	10	**1 300**	+ 50	+ 80	+ 50	+ 130	+ 50	+ 30	- 10	+ 1 000
FLAPS=3	SLATS<1	3	25	**1 500**	+ 50	N/A	+ 50	+ 120	+ 50	+ 30	- 20	+ 660
	1≤SLATS≤3	3	10	**1 290**	+ 50	+ 80	+ 50	+ 130	+ 50	+ 30	- 20	+ 850
	SLATS>3	3	5	**1 210**	+ 50	+ 80	+ 50	+ 120	+ 40	+ 30	- 10	+ 930
FLAPS>3	1≤SLATS≤3	FULL	10	**1 270**	+ 40	+ 70	+ 50	+ 130	+ 40	+ 20	- 10	+ 600
	SLATS>3	FULL	5	**1 190**	+ 40	+ 80	+ 50	+ 120	+ 40	+ 20	- 10	+ 680

(1) Automatic Landing correction: add 160m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 090m

5 - GOOD

Corrections on Landing Distance (m)					WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE		FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
FLAPS FAULT	FLAPS<1	3	25	**2 070**	+ 60	N/A	+ 110	+ 270	+ 100	+ 90	- 70	+ 1 040
	1≤FLAPS<2	3	15	**1 830**	+ 60	+ 130	+ 100	+ 250	+ 90	+ 70	- 60	+ 810
	2≤FLAPS<3	3	10	**1 720**	+ 50	+ 130	+ 90	+ 250	+ 80	+ 70	- 50	+ 750
	FLAPS=3	3	10	**1 720**	+ 50	+ 130	+ 90	+ 250	+ 80	+ 70	- 50	+ 630
	FLAPS>3	FULL	5	**1 560**	+ 50	+ 120	+ 80	+ 220	+ 70	+ 60	- 40	+ 510
SLATS FAULT	SLATS<1	3	25	**2 000**	+ 60	N/A	+ 100	+ 240	+ 90	+ 80	- 70	+ 480
	1≤SLATS≤3	3	10	**1 710**	+ 50	+ 120	+ 90	+ 240	+ 70	+ 60	- 50	+ 640
	SLATS>3	3	5	**1 620**	+ 50	+ 120	+ 80	+ 230	+ 70	+ 60	- 40	+ 700
FLAPS AND SLATS AT 0		1	50	**2 680**	+ 70	N/A	+ 140	+ 310	+ 130	+ 110	- 120	+ 750
FLAPS<1	SLATS<1	3	45	**2 570**	+ 70	N/A	+ 140	+ 300	+ 120	+ 110	- 110	+ 800
	SLATS≥1	3	25	**2 070**	+ 60	N/A	+ 110	+ 270	+ 100	+ 90	- 70	+ 1 040
1≤FLAPS<2	SLATS<1	3	30	**2 140**	+ 60	N/A	+ 110	+ 260	+ 100	+ 80	- 80	+ 660
	SLATS≥1	3	15	**1 830**	+ 60	+ 130	+ 100	+ 250	+ 90	+ 70	- 60	+ 810
2≤FLAPS<3	SLATS<1	3	25	**2 020**	+ 60	N/A	+ 100	+ 250	+ 90	+ 80	- 70	+ 600
	SLATS≥1	3	10	**1 720**	+ 50	+ 130	+ 90	+ 250	+ 80	+ 70	- 50	+ 750
FLAPS=3	SLATS<1	3	25	**2 020**	+ 60	N/A	+ 100	+ 250	+ 90	+ 80	- 70	+ 470
	1≤SLATS≤3	3	10	**1 720**	+ 50	+ 130	+ 90	+ 240	+ 80	+ 70	- 50	+ 630
	SLATS>3	3	5	**1 620**	+ 50	+ 130	+ 90	+ 240	+ 70	+ 60	- 50	+ 690
FLAPS>3	1≤SLATS≤3	FULL	10	**1 660**	+ 50	+ 110	+ 80	+ 230	+ 70	+ 60	- 50	+ 450
	SLATS>3	FULL	5	**1 560**	+ 50	+ 120	+ 80	+ 220	+ 70	+ 60	- 40	+ 510

(1) Automatic Landing correction: add 160m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 410m

Continued on the next page

SLATS AND FLAPS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

4 - GOOD TO MEDIUM

Corrections on Landing Distance (m)					WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE		FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
FLAPS FAULT	FLAPS<1	3	25	**2 290**	+ 40	N/A	+ 80	+ 210	+ 80	+ 110	- 130	+ 1 230
	1≤FLAPS<2	3	15	**2 090**	+ 40	+ 100	+ 80	+ 210	+ 70	+ 100	- 120	+ 960
	2≤FLAPS<3	3	10	**1 980**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 100	- 110	+ 890
	FLAPS=3	3	10	**1 980**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 100	- 110	+ 740
	FLAPS>3	FULL	5	**1 820**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 90	- 90	+ 590
SLATS FAULT	SLATS<1	3	25	**2 210**	+ 40	N/A	+ 80	+ 200	+ 70	+ 90	- 100	+ 570
	1≤SLATS≤3	3	10	**1 940**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 90	- 90	+ 740
	SLATS>3	3	5	**1 870**	+ 40	+ 100	+ 70	+ 200	+ 60	+ 90	- 90	+ 810
FLAPS AND SLATS AT 0		1	50	**2 780**	+ 40	N/A	+ 100	+ 230	+ 100	+ 120	- 170	+ 930
FLAPS<1	SLATS<1	3	45	**2 690**	+ 40	N/A	+ 100	+ 230	+ 90	+ 120	- 160	+ 980
	SLATS≥1	3	25	**2 290**	+ 40	N/A	+ 80	+ 210	+ 80	+ 110	- 130	+ 1 230
1≤FLAPS<2	SLATS<1	3	30	**2 350**	+ 40	N/A	+ 90	+ 220	+ 80	+ 100	- 130	+ 800
	SLATS≥1	3	15	**2 090**	+ 40	+ 100	+ 80	+ 210	+ 70	+ 100	- 120	+ 960
2≤FLAPS<3	SLATS<1	3	25	**2 240**	+ 40	N/A	+ 80	+ 210	+ 80	+ 100	- 130	+ 720
	SLATS≥1	3	10	**1 980**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 100	- 110	+ 890
FLAPS=3	SLATS<1	3	25	**2 250**	+ 40	N/A	+ 80	+ 210	+ 80	+ 100	- 130	+ 570
	1≤SLATS≤3	3	10	**1 990**	+ 40	+ 110	+ 70	+ 210	+ 70	+ 100	- 110	+ 740
	SLATS>3	3	5	**1 900**	+ 40	+ 100	+ 70	+ 210	+ 60	+ 100	- 100	+ 800
FLAPS>3	1≤SLATS≤3	FULL	10	**1 910**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 90	- 100	+ 520
	SLATS>3	FULL	5	**1 820**	+ 40	+ 100	+ 70	+ 200	+ 70	+ 90	- 90	+ 590

(1) Automatic Landing correction: add 160m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 660m

Continued on the next page

SLATS AND FLAPS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

3 - MEDIUM

Corrections on Landing Distance (m)					WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE		FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
FLAPS FAULT	FLAPS<1	3	25	**2 640**	+ 50	N/A	+ 100	+ 260	+ 90	+ 160	- 200	+ 1 160
	1≤FLAPS<2	3	15	**2 380**	+ 40	+ 120	+ 90	+ 250	+ 90	+ 150	- 170	+ 910
	2≤FLAPS<3	3	10	**2 260**	+ 40	+ 120	+ 90	+ 250	+ 80	+ 150	- 160	+ 830
	FLAPS=3	3	10	**2 260**	+ 40	+ 110	+ 90	+ 260	+ 80	+ 150	- 160	+ 690
	FLAPS>3	FULL	5	**2 060**	+ 40	+ 100	+ 80	+ 240	+ 70	+ 130	- 140	+ 550
SLATS FAULT	SLATS<1	3	25	**2 470**	+ 50	N/A	+ 90	+ 240	+ 90	+ 130	- 140	+ 540
	1≤SLATS≤3	3	10	**2 190**	+ 40	+ 110	+ 80	+ 240	+ 80	+ 130	- 120	+ 700
	SLATS>3	3	5	**2 100**	+ 40	+ 110	+ 80	+ 230	+ 80	+ 120	- 120	+ 760
FLAPS AND SLATS AT 0		1	50	**3 200**	+ 50	N/A	+ 120	+ 280	+ 110	+ 190	- 250	+ 880
FLAPS<1	SLATS<1	3	45	**3 100**	+ 50	N/A	+ 120	+ 280	+ 100	+ 180	- 240	+ 930
	SLATS≥1	3	25	**2 640**	+ 50	N/A	+ 100	+ 260	+ 90	+ 160	- 200	+ 1 160
1≤FLAPS<2	SLATS<1	3	30	**2 680**	+ 50	N/A	+ 100	+ 260	+ 90	+ 160	- 200	+ 750
	SLATS≥1	3	15	**2 380**	+ 40	+ 120	+ 90	+ 250	+ 90	+ 150	- 170	+ 910
2≤FLAPS<3	SLATS<1	3	25	**2 550**	+ 40	N/A	+ 100	+ 250	+ 80	+ 150	- 180	+ 680
	SLATS≥1	3	10	**2 260**	+ 40	+ 120	+ 90	+ 250	+ 80	+ 150	- 160	+ 830
FLAPS=3	SLATS<1	3	25	**2 550**	+ 40	N/A	+ 100	+ 250	+ 90	+ 150	- 190	+ 540
	1≤SLATS≤3	3	10	**2 260**	+ 40	+ 120	+ 90	+ 250	+ 80	+ 150	- 160	+ 690
	SLATS>3	3	5	**2 160**	+ 40	+ 120	+ 80	+ 250	+ 80	+ 140	- 150	+ 760
FLAPS>3	1≤SLATS≤3	FULL	10	**2 150**	+ 40	+ 110	+ 80	+ 240	+ 80	+ 130	- 140	+ 490
	SLATS>3	FULL	5	**2 060**	+ 40	+ 100	+ 80	+ 240	+ 70	+ 130	- 140	+ 550

(1) Automatic Landing correction: add 160m - (2) Weight correction: subtract 20m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 1 860m

2 - MEDIUM TO POOR

Corrections on Landing Distance (m)					WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE		FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
FLAPS FAULT	FLAPS<1	3	25	**3 580**	+ 100	N/A	+ 220	+ 580	+ 200	+ 410	- 320	+ 730
	1≤FLAPS<2	3	15	**2 990**	+ 90	+ 200	+ 180	+ 500	+ 160	+ 300	- 230	+ 570
	2≤FLAPS<3	3	10	**2 760**	+ 90	+ 200	+ 170	+ 480	+ 150	+ 270	- 200	+ 520
	FLAPS=3	3	10	**2 720**	+ 80	+ 190	+ 160	+ 470	+ 140	+ 260	- 200	+ 440
	FLAPS>3	FULL	5	**2 370**	+ 70	+ 160	+ 130	+ 410	+ 120	+ 190	- 150	+ 370
SLATS FAULT	SLATS<1	3	25	**3 030**	+ 90	N/A	+ 160	+ 420	+ 150	+ 240	- 200	+ 390
	1≤SLATS≤3	3	10	**2 620**	+ 80	+ 180	+ 150	+ 420	+ 140	+ 220	- 150	+ 470
	SLATS>3	3	5	**2 490**	+ 80	+ 180	+ 140	+ 420	+ 130	+ 210	- 140	+ 500
FLAPS AND SLATS AT 0		1	50	**4 540**	+ 110	N/A	+ 260	+ 620	+ 230	+ 500	- 470	+ 580
FLAPS<1	SLATS<1	3	45	**4 370**	+ 110	N/A	+ 250	+ 620	+ 230	+ 490	- 440	+ 600
	SLATS≥1	3	25	**3 580**	+ 100	N/A	+ 220	+ 580	+ 200	+ 410	- 320	+ 730
1≤FLAPS<2	SLATS<1	3	30	**3 440**	+ 90	N/A	+ 190	+ 510	+ 180	+ 330	- 290	+ 490
	SLATS≥1	3	15	**2 990**	+ 90	+ 200	+ 180	+ 500	+ 160	+ 300	- 230	+ 570
2≤FLAPS<3	SLATS<1	3	25	**3 200**	+ 90	N/A	+ 180	+ 490	+ 160	+ 290	- 260	+ 450
	SLATS≥1	3	10	**2 760**	+ 90	+ 200	+ 170	+ 480	+ 150	+ 270	- 200	+ 520
FLAPS=3	SLATS<1	3	25	**3 160**	+ 90	N/A	+ 180	+ 480	+ 150	+ 280	- 250	+ 370
	1≤SLATS≤3	3	10	**2 730**	+ 80	+ 190	+ 160	+ 470	+ 140	+ 260	- 200	+ 440
	SLATS>3	3	5	**2 570**	+ 80	+ 200	+ 160	+ 470	+ 130	+ 250	- 180	+ 470
FLAPS>3	1≤SLATS≤3	FULL	10	**2 500**	+ 70	+ 160	+ 140	+ 410	+ 120	+ 200	- 170	+ 340
	SLATS>3	FULL	5	**2 370**	+ 70	+ 160	+ 130	+ 410	+ 120	+ 190	- 150	+ 370

(1) Automatic Landing correction: add 180m - (2) Weight correction: subtract 30m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 2 080m

Continued on the next page

SLATS AND FLAPS SYSTEM

The Reference Distance (REF DIST) considers : Sea Level (SL), ISA, no wind, no slope, no engine reverse thrust, manual landing(1), maximum manual braking, VAPP = VREF+ΔVREF without APPR COR.

1 - POOR

Corrections on Landing Distance (m)					WGT(2)	SPD	ALT	WIND	TEMP	SLOPE	REV	OVW
FAILURE		FLAPS LEVER for LDG	ΔVREF	REF DIST (m) for 66T	Per 1T above 66T	Per 5kt	Per 1000ft above SL	Per 5kt TW	Per 10°C above ISA	Per 1% Down Slope	Per Thrust Reverser Operative	If OVW PROC applied
FLAPS FAULT	FLAPS<1	3	25	Landing Distance greater than 6 000 m for all conditions								
	1≤FLAPS<2	3	15	Landing Distance greater than 6 000 m for all conditions								
	2≤FLAPS<3	3	10	Landing Distance greater than 6 000 m for all conditions								
	FLAPS=3	3	10	Landing Distance greater than 6 000 m for all conditions								
	FLAPS>3	FULL	5	Landing Distance greater than 6 000 m for all conditions								
SLATS FAULT	SLATS<1	3	25	**4 600**	+ 80	N/A	+ 180	+ 610	+ 210	+ 1 150	- 600	+ 390
	1≤SLATS≤3	3	10	**4 200**	+ 80	+ 160	+ 160	+ 610	+ 200	+ 1 150	- 560	+ 470
	SLATS>3	3	5	**4 070**	+ 80	+ 170	+ 160	+ 610	+ 190	+ 1 150	- 550	+ 500
FLAPS AND SLATS AT 0		1	50	Landing Distance greater than 6 000 m for all conditions								
FLAPS<1	SLATS<1	3	45	Landing Distance greater than 6 000 m for all conditions								
	SLATS≥1	3	25	Landing Distance greater than 6 000 m for all conditions								
1≤FLAPS<2	SLATS<1	3	30	Landing Distance greater than 6 000 m for all conditions								
	SLATS≥1	3	15	Landing Distance greater than 6 000 m for all conditions								
2≤FLAPS<3	SLATS<1	3	25	Landing Distance greater than 6 000 m for all conditions								
	SLATS≥1	3	10	Landing Distance greater than 6 000 m for all conditions								
FLAPS=3	SLATS<1	3	25	Landing Distance greater than 6 000 m for all conditions								
	1≤SLATS≤3	3	10	Landing Distance greater than 6 000 m for all conditions								
	SLATS>3	3	5	Landing Distance greater than 6 000 m for all conditions								
FLAPS>3	1≤SLATS≤3	FULL	10	Landing Distance greater than 6 000 m for all conditions								
	SLATS>3	FULL	5	Landing Distance greater than 6 000 m for all conditions								

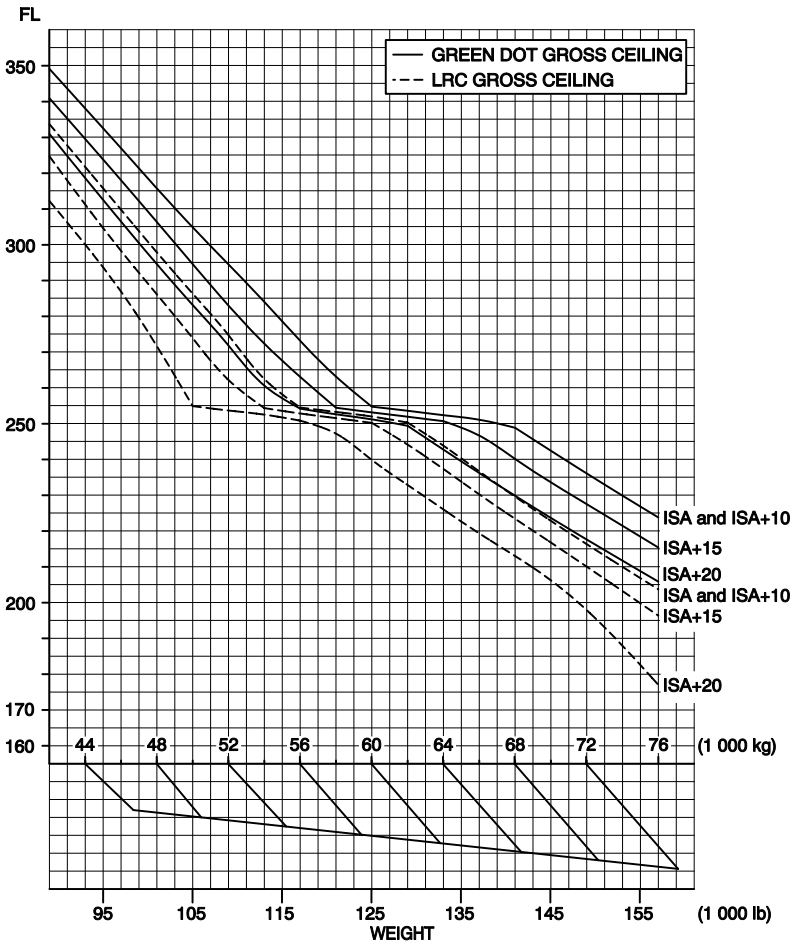
(1) Automatic Landing correction: add 160m - (2) Weight correction: subtract 10m per 1T below 66T

REF DIST without failure (valid for all FLAPS LEVER positions) = 3 450m

CEILINGS

ONE ENGINE OUT

GROSS CEILING at LONG RANGE and GREEN DOT SPEEDS Pack Flow Hi - Anti ice OFF



CORRECTIONS		ISA	ISA + 10	ISA + 15	ISA + 20
LONG RANGE	ENGINE ANTI ICE ON	-200 ft	-1 200 ft	-1 800 ft	-7 800 ft
	TOTAL ANTI ICE ON	-900 ft	-3 900 ft	-9 600 ft	-11 700 ft
GREEN DOT	ENGINE ANTI ICE ON	-200 ft	-1 200 ft	-1 200 ft	-2 000 ft
	TOTAL ANTI ICE ON	-1 200 ft	-3 400 ft	-4 200 ft	-4 900 ft

GROSS FLIGHT PATH DESCENT AT GREEN DOT SPEED

ONE ENGINE OUT

GROSS FLIGHT PATH DESCENT AT GREEN DOT SPEED - 1 ENGINE OUT

MAX. CONTINUOUS THRUST
PACK FLOW HI
ANTI-ICING OFF

ISA
CG=33.0%

DISTANCE (NM) TIME (MIN)
INITIAL SPEED (KT) FUEL (1000KG)
LEVEL OFF (FT)

INIT.GW (1000KG)	INITIAL FLIGHT LEVEL 250	290	310	330	350	370	390
50			83 16 196 .4 30700	205 38 196 1.0 31000	253 47 200 1.2 31200	284 52 202 1.3 31200	308 56 204 1.4 31300
52			170 32 200 .9 29900	237 44 202 1.2 30000	273 51 204 1.3 30100	301 55 206 1.5 30200	322 58 208 1.5 30200
54		102 20 202 .6 28700	207 39 204 1.1 29000	255 48 206 1.3 29100	287 53 208 1.5 29200	311 57 210 1.5 29200	331 60 212 1.6 29200
56		174 33 206 1.0 27800	238 45 208 1.3 28000	276 51 210 1.5 28100	304 56 212 1.6 28200	324 59 214 1.6 28200	345 62 216 1.7 28200
58		215 41 210 1.2 26900	262 49 212 1.5 27000	294 55 214 1.6 27100	320 59 216 1.7 27200	339 62 218 1.8 27200	358 65 220 1.8 27200
60		244 46 214 1.4 26000	283 53 216 1.6 26100	311 58 218 1.7 26100	334 61 220 1.8 26200	353 64 222 1.9 26200	369 67 224 1.9 26300
62		176 33 218 1.0 25400	220 41 220 1.2 25400	240 44 222 1.3 25400	267 48 224 1.4 25400	302 54 226 1.6 25400	321 57 228 1.7 25400
64		117 21 222 .7 25200	149 27 224 .8 25200	175 31 226 .9 25300	197 35 228 1.0 25300	216 37 230 1.1 25300	233 40 232 1.2 25300
66		98 18 226 .6 25100	126 22 228 .7 25100	149 26 230. .8 25100	169 29 232 .9 25100	187 32 234 .9 25100	203 34 236 1.0 25100
68	26 5 226 .2 24900	94 17 230 .5 25000	120 21 232 .7 25000	141 24 234 .8 25000	153 26 236 .8 25000	170 28 238 .8 25000	185 30 240 .9 25000
70	119 21 230 .8 24500	182 32 234 1.2 24600	205 36 236 1.3 24600	222 39 238 1.3 24700	238 41 240 1.4 24700	253 43 242 1.4 24700	
72	153 27 234 1.1 23900	214 38 238 1.4 24000	234 41 240 1.5 24100	252 44 242 1.6 24100	268 46 244 1.6 24100	284 48 246 1.7 24100	
74	178 32 238 1.3 23400	232 41 242 1.6 23500	253 44 244 1.7 23500	270 47 246 1.7 23500	286 49 248 1.8 23500	300 51 250 1.8 23500	
76	196 35 242 1.4 22800	246 43 246 1.7 22900	264 46 248 1.8 22900	280 48 250 1.8 22900	295 50 252 1.9 23000	311 52 254 1.9 23000	
78	209 37 246 1.6 22300	256 44 250 1.8 22300	274 47 252 1.9 22300	291 50 254 1.9 22400	306 52 256 2.0 22400		

CORRECTIONS	DISTANCE	TIME	FUEL	LEVEL OFF
ENGINE ANTI ICE ON	+ 3 %	+ 3 %	+ 7 %	- 100 FT
TOTAL ANTI ICE ON	+ 8 %	+ 8 %	+ 10 %	- 700 FT

CRUISE AT LONG RANGE CRUISE SPEED

ONE ENGINE OUT

LONG RANGE CRUISE - 1 ENGINE OUT						
MAX. CONTINUOUS THRUST LIMITS PACK FLOW HI ANTI-ICING OFF			ISA CG=33.0%	N1 (%) FUEL FLOW (KG/H)		MACH IAS (KT)
WEIGHT (1000KG)	FL100	FL150	FL190	FL210	FL230	FL250
50	75.5 .453 1891 251	79.5 .492 1848 248	82.2 .520 1802 242	83.3 .533 1778 238	84.7 .549 1771 236	85.8 .560 1750 231
52	76.7 .463 1967 256	80.5 .500 1915 252	82.9 .524 1856 244	84.3 .541 1851 242	85.5 .554 1833 238	86.7 .567 1825 234
54	77.8 .471 2041 261	81.4 .507 1983 255	83.8 .532 1925 248	85.2 .548 1920 246	86.2 .558 1896 240	87.4 .568 1880 235
56	78.9 .479 2112 265	82.4 .514 2049 259	84.6 .539 1996 251	85.9 .553 1983 248	87.0 .565 1969 243	88.4 .577 1975 238
58	79.7 .485 2175 268	83.1 .519 2107 261	85.5 .546 2068 255	86.5 .557 2045 250	87.7 .569 2035 245	89.5 .586 2075 242
60	80.4 .490 2233 271	83.7 .522 2160 263	86.2 .551 2132 257	87.2 .562 2112 252	88.4 .571 2100 246	90.6 .595 2178 246
62	81.1 .495 2292 274	84.3 .527 2219 266	86.8 .555 2194 259	88.0 .569 2190 255	89.6 .583 2211 251	92.1 .610 2302 253
64	82.0 .502 2363 278	85.0 .533 2289 269	87.4 .559 2258 261	88.6 .570 2247 256	90.5 .590 2306 254	92.4 .601 2323 249
66	82.8 .508 2431 281	85.8 .539 2361 272	88.1 .564 2330 264	89.4 .575 2327 258	91.5 .599 2413 258	92.6 .582 2315 241
68	83.6 .514 2499 284	86.5 .545 2434 275	88.8 .570 2406 266	90.3 .584 2434 263	92.7 .609 2523 263	
70	84.3 .519 2563 287	87.2 .550 2503 278	89.3 .571 2463 267	91.2 .591 2529 266	93.1 .601 2547 260	
72	84.8 .522 2619 289	87.7 .554 2566 280	90.0 .576 2546 269	92.2 .599 2638 269	93.3 .585 2543 252	
74	85.3 .524 2672 291	88.2 .557 2628 281	91.0 .585 2657 274	93.3 .609 2752 274	93.5 .554 2524 238	
76	85.8 .528 2731 293	88.8 .561 2695 283	91.8 .591 2754 277	93.6 .603 2778 271		
78	86.4 .533 2802 295	89.3 .565 2766 286	92.6 .598 2861 280	93.9 .591 2784 265		
ENGINE ANTI ICE ON △FUEL = + 3.5 %				TOTAL ANTI ICE ON △FUEL = + 7 %		

IN CRUISE QUICK CHECK LONG RANGE

ONE ENGINE OUT

IN CRUISE QUICK CHECK FROM ANY MOMENT IN CRUISE TO LANDING - 1 ENGINE OUT
CRUISE : LONG RANGE - DESCENT : M.78/300KT/250KT - IMC PROCEDURE : 120 KG (6 MIN)

REF. INITIAL WEIGHT = 55000 KG PACK FLOW HI ANTI-ICING OFF	ISA CG = 33.0 %	**FUEL CONSUMED (KG)** **TIME (H.MIN)**

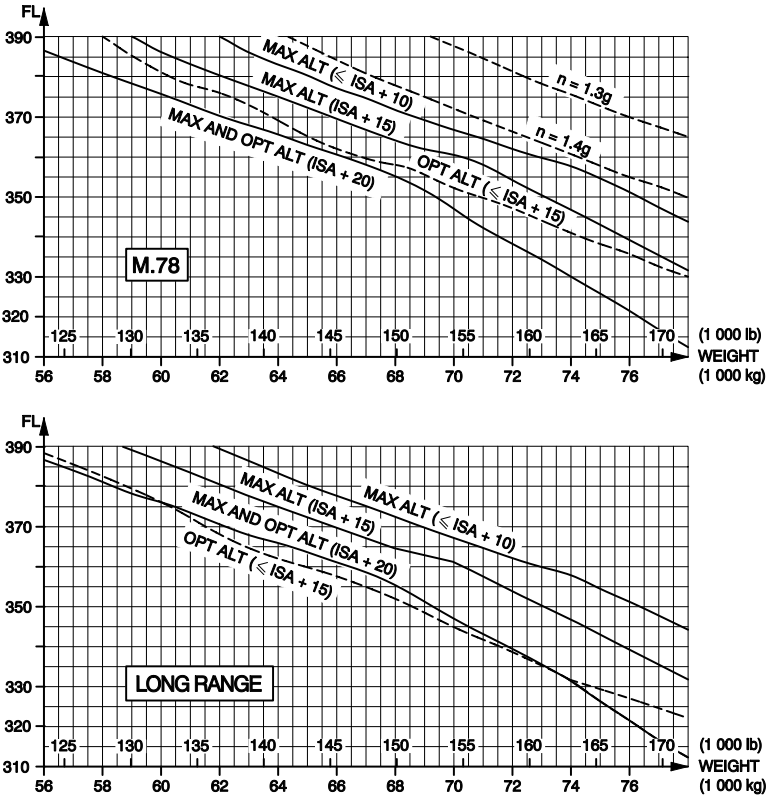
AIR DIST. (NM)	FLIGHT LEVEL						CORRECTION ON FUEL CONSUMPTION (KG/1000KG)		
	100	**150**	**200**	**220**	**240**	**250**	**FL100 FL150**	**FL200 FL220**	**FL240 FL250**
200	1379 0.46	1188 0.44	1061 0.42	1017 0.42	978 0.41	961 0.41	9	7	8
300	2055 1.06	1811 1.03	1641 1.01	1583 1.00	1533 0.59	1511 0.59	15	14	17
400	2727 1.26	2430 1.22	2217 1.19	2146 1.18	2085 1.17	2058 1.17	21	21	24
500	3394 1.46	3046 1.41	2790 1.37	2705 1.35	2632 1.34	2601 1.34	27	27	32
600	4058 2.06	3658 2.00	3359 1.55	3260 1.53	3175 1.52	3140 1.52	32	34	40
700	4718 2.27	4266 2.20	3924 2.14	3812 2.11	3713 2.10	3676 2.09	38	40	47
800	5373 2.48	4870 2.39	4485 2.32	4360 2.29	4248 2.28	4207 2.27	44	46	54
900	6024 3.09	5471 2.59	5042 2.51	4904 2.47	4780 2.46	4734 2.45	50	53	60
1000	6672 3.29	6067 3.18	5596 3.10	5445 3.06	5307 3.04	5257 3.02	56	59	67
1100	7315 3.51	6661 3.38	6146 3.28	5982 3.24	5831 3.22	5777 3.20	62	65	74
1200	7955 4.12	7251 3.58	6693 3.47	6516 3.42	6352 3.40	6293 3.38	68	71	80
1300	8590 4.33	7837 4.17	7237 4.06	7047 4.00	6869 3.58	6806 3.55	73	77	86
1400	9222 4.55	8421 4.37	7777 4.25	7574 4.19	7382 4.16	7315 4.13	79	83	93

ENGINE ANTI ICE ON △FUEL = + 2.5 %	**TOTAL ANTI ICE ON** △FUEL = + 5 %

FLIP23D A320-214 CFM56-5B4/P SA3610 03301.001011 0300250 .7801 .00100 120 0300350 55 0 100100 35100 18590 CL-NO-04-08-170

OPTIMUM & MAXIMUM ALTITUDES

ALL ENGINES



CORRECTIONS	ENGINE ANTI ICE	TOTAL ANTI ICE
ISA	Max ALT : -200 ft. Opt ALT : -200 ft	Max ALT : -500 ft Opt ALT : -300 ft
ISA +10	Max ALT : -1 500 ft Opt ALT : -400 ft	Max ALT : -4 200 ft Opt ALT : -3 100 ft
ISA +15	Max ALT : -3 500 ft Opt ALT :-3 500 ft	Max ALT : -4 800 ft Opt ALT : -4 300 ft
ISA +20	Max ALT : -5 300 ft Opt ALT : -3 800 ft	Max ALT : -6 500 ft Opt ALT : -6 200 ft

IN CRUISE QUICK CHECK AT A GIVEN MACH NUMBER

IN CRUISE QUICK CHECK FROM ANY MOMENT IN CRUISE TO LANDING - ALL ENGINES

IN CRUISE QUICK CHECK FROM ANY MOMENT IN CRUISE TO LANDING - ALL ENGINES
CRUISE : M.78 - DESCENT : M.78/300KT/250KT
IMC PROCEDURE : 120 KG (6 MIN)

REF. INITIAL WEIGHT = 60000 KG	ISA	FUEL CONSUMED (KG)
NORMAL AIR CONDITIONING	CG=33.0%	
ANTI ICE OFF		TIME (H.MIN)

AIR DIST. (NM)	FLIGHT LEVEL						CORRECTION ON FUEL CONSUMPTION (KG/1000KG)		
	290	310	330	350	370	390	FL290 FL310	FL330 FL350	FL370 FL390
200	974 0.35	915 0.35	863 0.36	818 0.36	782 0.36	758 0.36	0	1	4
400	2147 1.01	2023 1.02	1913 1.02	1822 1.03	1756 1.03	1727 1.03	5	9	16
600	3315 1.27	3124 1.28	2957 1.28	2818 1.29	2720 1.29	2682 1.29	10	16	33
800	4477 1.53	4218 1.54	3993 1.55	3806 1.56	3674 1.56	3622 1.56	15	23	45
1000	5634 2.19	5306 2.20	5023 2.21	4787 2.22	4617 2.23	4549 2.23	20	30	56
1200	6786 2.45	6387 2.46	6045 2.48	5759 2.49	5551 2.50	5463 2.50	24	37	67
1400	7933 3.11	7464 3.13	7062 3.14	6724 3.16	6475 3.17	6365 3.17	29	43	77
1600	9076 3.37	8537 3.39	8075 3.41	7683 3.42	7392 3.43	7256 3.43	33	49	86
1800	10214 4.03	9604 4.05	9081 4.07	8636 4.09	8302 4.10	8135 4.10	34	54	95
2000	11347 4.29	10665 4.31	10083 4.33	9582 4.36	9203 4.37	9004 4.37	41	60	103
2200	12475 4.55	11721 4.57	11078 5.00	10521 5.02	10098 5.04	9863 5.04	45	65	111
2400	13599 5.21	12775 5.23	12068 5.26	11454 5.29	10984 5.31	10711 5.31	49	70	118
2600	14718 5.47	13824 5.50	13052 5.53	12382 5.56	11863 5.57	11550 5.57	52	74	125
2800	15833 6.13	14869 6.16	14030 6.19	13305 6.22	12739 6.24	12382 6.24	55	79	131
3000	16944 6.39	15909 6.42	15002 6.45	14222 6.49	13608 6.51	13211 6.51	58	83	137

CORRECTIONS	LOW AIR CONDITIONING	ENGINE ANTI ICE ON	TOTAL ANTI ICE ON
FUEL	- 0.5 %	+ 3 %	+ 6 %

COST INDEX FOR LONG RANGE CRUISE SPEED

ALL ENGINES

For a quick determination of the CI_{LRC}, use:

- CI_{LRC} = 25 kg/min in the FMGC, for aircraft in metric units.
  or
- CI_{LRC} = 35 (100 lb/h) in the FMGC, for aircraft in US units.

STANDARD DESCENT

ALL ENGINES

DESCENT - M.78/300KT/250KT									
IDLE THRUST NORMAL AIR CONDITIONING ANTI-ICING OFF			ISA CG=33.0%		MAXIMUM CABIN RATE OF DESCENT 350FT/MIN				
WEIGHT (1000KG)	45				65				
FL	TIME (MIN)	FUEL (KG)	DIST. (NM)	N1	TIME (MIN)	FUEL (KG)	DIST. (NM)	N1	IAS (KT)
390	16.1	204	101	68.8	17.4	165	106	IDLE	241
370	14.6	174	89	69.9	16.7	160	100	IDLE	252
350	12.9	134	77	72.1	16.0	156	95	IDLE	264
330	12.0	119	70	IDLE	15.4	153	91	IDLE	277
310	11.6	117	67	IDLE	14.8	149	86	IDLE	289
290	11.1	114	64	IDLE	14.2	145	82	IDLE	300
270	10.6	110	59	IDLE	13.4	141	76	IDLE	300
250	10.0	107	55	IDLE	12.7	136	71	IDLE	300
240	9.7	105	53	IDLE	12.3	133	68	IDLE	300
220	9.1	100	49	IDLE	11.5	127	62	IDLE	300
200	8.5	94	45	IDLE	10.6	119	56	IDLE	300
180	7.8	86	40	IDLE	9.8	109	51	IDLE	300
160	7.1	78	36	IDLE	8.8	97	45	IDLE	300
140	6.3	67	31	IDLE	7.9	83	39	IDLE	300
120	5.6	57	27	IDLE	6.9	70	33	IDLE	300
100	4.9	48	23	IDLE	6.0	58	28	IDLE	300
50	1.7	15	7	IDLE	2.1	18	9	IDLE	250
15	.0	0	0	IDLE	.0	0	0	IDLE	250

CORRECTIONS	LOW AIR CONDITIONING	ENGINE ANTI ICE ON	TOTAL ANTI ICE ON	PER 1° ABOVE ISA
TIME	–	+ 6 %	+ 6 %	–
FUEL	– 2 %	+ 28 %	+ 44 %	+ 0.2 %
DISTANCE	–	+ 3 %	+ 4 %	+ 0.3 %

11.0-08F0A320-214 CFM56-5B4/P SA23100000C5KG330 0 018590 0 0-1-350.0 15.0 .00 0 03 .780300.000250.000 0 FCOM-N0-03-05-30-002-170

QUICK DETERMINATION TABLE OF ALTERNATE FLIGHT PLANNING

ALL ENGINES

ALTERNATE PLANNING FROM DESTINATION TO ALTERNATE AIRPORT
GO-AROUND : 100 KG - CLIMB : 250KT/300KT/M.78 - CRUISE : LONG RANGE
DESCENT : M.78/300KT/250KT - VMC PROCEDURE : 80 KG (4MIN)

REF. LDG WT AT DEST. = 55000 KG NORMAL AIR CONDITIONING ANTI-ICING OFF	ISA CG = 33.0 %	FUEL CONSUMED (KG) TIME (H.MIN)

AIR DIST. (NM)	FLIGHT LEVEL						CORRECTION ON FUEL CONSUMPTION (KG/1000KG)		
	100	150	200	250	290	330	FL100 FL150	FL200 FL250	FL290 FL330
40	522 0.12						2		
60	677 0.16	663 0.16					3		
80	831 0.19	801 0.19					5		
100	986 0.23	940 0.23	937 0.22				6	6	
120	1141 0.27	1078 0.26	1061 0.26	1073 0.25			7	7	
140	1296 0.31	1217 0.30	1186 0.29	1187 0.28			8	8	
160	1451 0.35	1356 0.33	1310 0.33	1301 0.31	1312 0.30		9	9	10
180	1607 0.38	1495 0.37	1435 0.36	1415 0.34	1417 0.33	1429 0.33	10	10	11
200	1762 0.42	1634 0.40	1559 0.40	1529 0.38	1523 0.36	1528 0.36	11	11	13
220	1918 0.46	1774 0.44	1684 0.43	1644 0.41	1629 0.39	1628 0.38	12	12	14
240	2074 0.50	1913 0.47	1809 0.47	1758 0.44	1735 0.42	1727 0.41	13	13	15
260	2231 0.53	2053 0.51	1934 0.50	1872 0.47	1841 0.45	1827 0.44	14	14	16
280	2387 0.57	2193 0.54	2060 0.53	1987 0.50	1948 0.48	1927 0.47	15	15	17
300	2544 1.01	2332 0.58	2185 0.57	2102 0.53	2054 0.51	2027 0.50	16	16	18
320	2700 1.04	2473 1.01	2310 1.00	2217 0.57	2161 0.54	2127 0.53	17	17	19
340	2857 1.08	2613 1.05	2436 1.04	2332 1.00	2267 0.57	2227 0.56	18	18	20
360	3014 1.12	2753 1.08	2562 1.07	2447 1.03	2374 1.00	2327 0.58	19	20	21
380	3170 1.16	2893 1.12	2688 1.11	2562 1.06	2481 1.03	2427 1.01	20	21	22
400	3328 1.19	3033 1.15	2814 1.14	2678 1.09	2587 1.06	2528 1.04	21	22	23
420	3485 1.23	3174 1.19	2940 1.18	2793 1.12	2694 1.09	2628 1.07	22	23	24
440	3642 1.27	3314 1.22	3066 1.21	2909 1.15	2802 1.12	2729 1.10	23	24	25
460	3800 1.30	3455 1.26	3192 1.24	3024 1.19	2909 1.15	2830 1.13	24	25	26
480	3957 1.34	3595 1.29	3319 1.28	3140 1.22	3016 1.18	2930 1.16	25	26	27
500	4115 1.38	3736 1.33	3446 1.31	3256 1.25	3123 1.21	3031 1.18	26	27	28

LOW AIR CONDITIONING	ENGINE ANTI ICE ON	TOTAL ANTI ICE ON
△FUEL = - 1 %	△FUEL = + 5 %	△FUEL = + 7 %

IN CRUISE QUICK CHECK FL 100 LONG RANGE

FLIGHT WITHOUT CAB PRESS

IN CRUISE QUICK CHECK FROM ANY MOMENT IN CRUISE TO LANDING
CRUISE : LONG RANGE - DESCENT : 250KT
IMC PROCEDURE : 120 KG (6MIN)

FL100

NORMAL AIR CONDITIONING
ANTI-ICING OFF

ISA
CG = 25.0%

FUEL CONSUMED (KG)
TIME (H.MIN)

AIR DIST. (NM)	INITIAL WEIGHT (1000KG)						
	50	55	60	65	70	75	80
40	312 0.15	310 0.15	309 0.15	310 0.15	311 0.15	314 0.15	318 0.15
60	458 0.19	463 0.19	467 0.18	472 0.18	478 0.18	485 0.18	493 0.18
80	604 0.23	616 0.22	625 0.22	634 0.22	644 0.22	655 0.21	667 0.21
100	750 0.28	768 0.26	783 0.26	797 0.25	811 0.25	825 0.25	841 0.25
120	896 0.32	921 0.30	940 0.29	959 0.29	977 0.28	995 0.28	1015 0.28
140	1041 0.36	1073 0.34	1098 0.33	1121 0.32	1143 0.32	1165 0.32	1189 0.32
160	1186 0.41	1225 0.38	1255 0.37	1283 0.36	1309 0.35	1335 0.35	1363 0.35
180	1331 0.45	1377 0.42	1413 0.40	1444 0.39	1475 0.39	1504 0.38	1537 0.38
200	1476 0.50	1529 0.46	1570 0.44	1606 0.43	1640 0.42	1674 0.42	1710 0.42
220	1621 0.54	1680 0.50	1727 0.48	1767 0.46	1806 0.46	1843 0.45	1883 0.45
240	1765 0.58	1831 0.54	1884 0.51	1928 0.50	1971 0.49	2012 0.49	2056 0.48
260	1910 1.03	1982 0.58	2040 0.55	2090 0.54	2136 0.52	2181 0.52	2229 0.52
280	2054 1.07	2133 1.02	2197 0.59	2251 0.57	2302 0.56	2350 0.55	2402 0.55
300	2198 1.11	2284 1.06	2353 1.03	2411 1.01	2467 0.59	2519 0.59	2575 0.59
320	2341 1.16	2434 1.10	2510 1.06	2572 1.04	2632 1.03	2687 1.02	2748 1.02
340	2485 1.20	2585 1.14	2666 1.10	2733 1.08	2796 1.06	2856 1.06	2920 1.05
360	2628 1.25	2735 1.19	2822 1.14	2893 1.11	2961 1.10	3024 1.09	3093 1.09
380	2771 1.29	2885 1.23	2978 1.17	3053 1.15	3125 1.13	3193 1.12	3265 1.12
400	2914 1.33	3034 1.27	3133 1.21	3213 1.18	3290 1.17	3361 1.16	3437 1.15
420	3057 1.38	3184 1.31	3289 1.25	3373 1.22	3454 1.20	3529 1.19	3609 1.19
440	3199 1.42	3333 1.35	3444 1.29	3533 1.26	3618 1.23	3697 1.22	3780 1.22
460	3342 1.47	3482 1.40	3600 1.32	3693 1.29	3782 1.27	3865 1.26	3952 1.26
480	3484 1.51	3631 1.44	3755 1.36	3852 1.33	3946 1.30	4033 1.29	4124 1.29
500	3626 1.56	3780 1.48	3910 1.40	4012 1.36	4110 1.34	4200 1.33	4295 1.32
520	3768 2.00	3928 1.52	4065 1.44	4171 1.40	4273 1.37	4368 1.36	4466 1.36
540	3909 2.05	4077 1.57	4219 1.47	4330 1.44	4437 1.41	4535 1.39	4637 1.39

AIR CONDITIONING OFF	ENGINE ANTI ICE ON	TOTAL ANTI ICE ON
△FUEL = – 2.5 %	△FUEL = + 5 %	△FUEL = + 9 %

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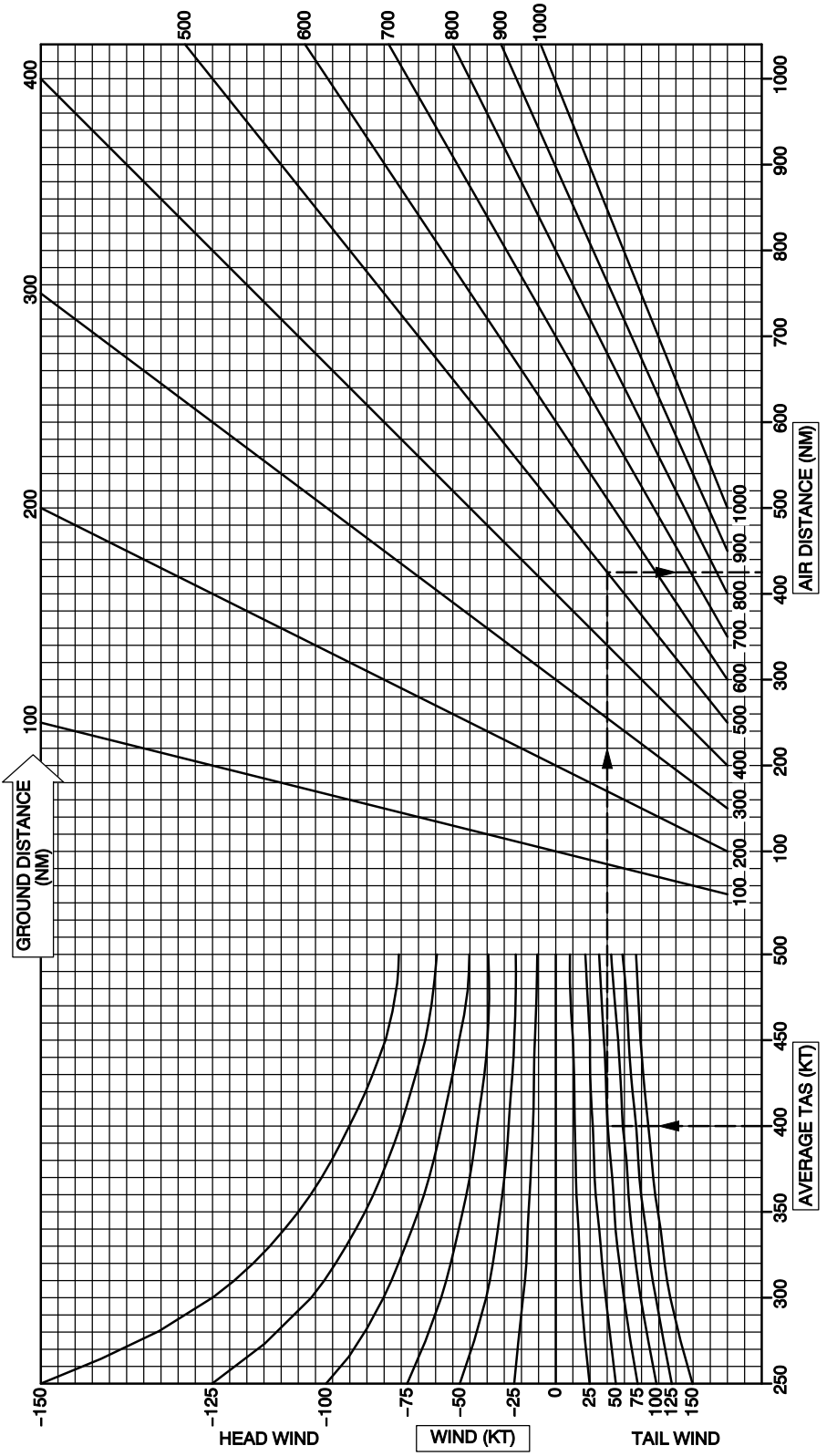
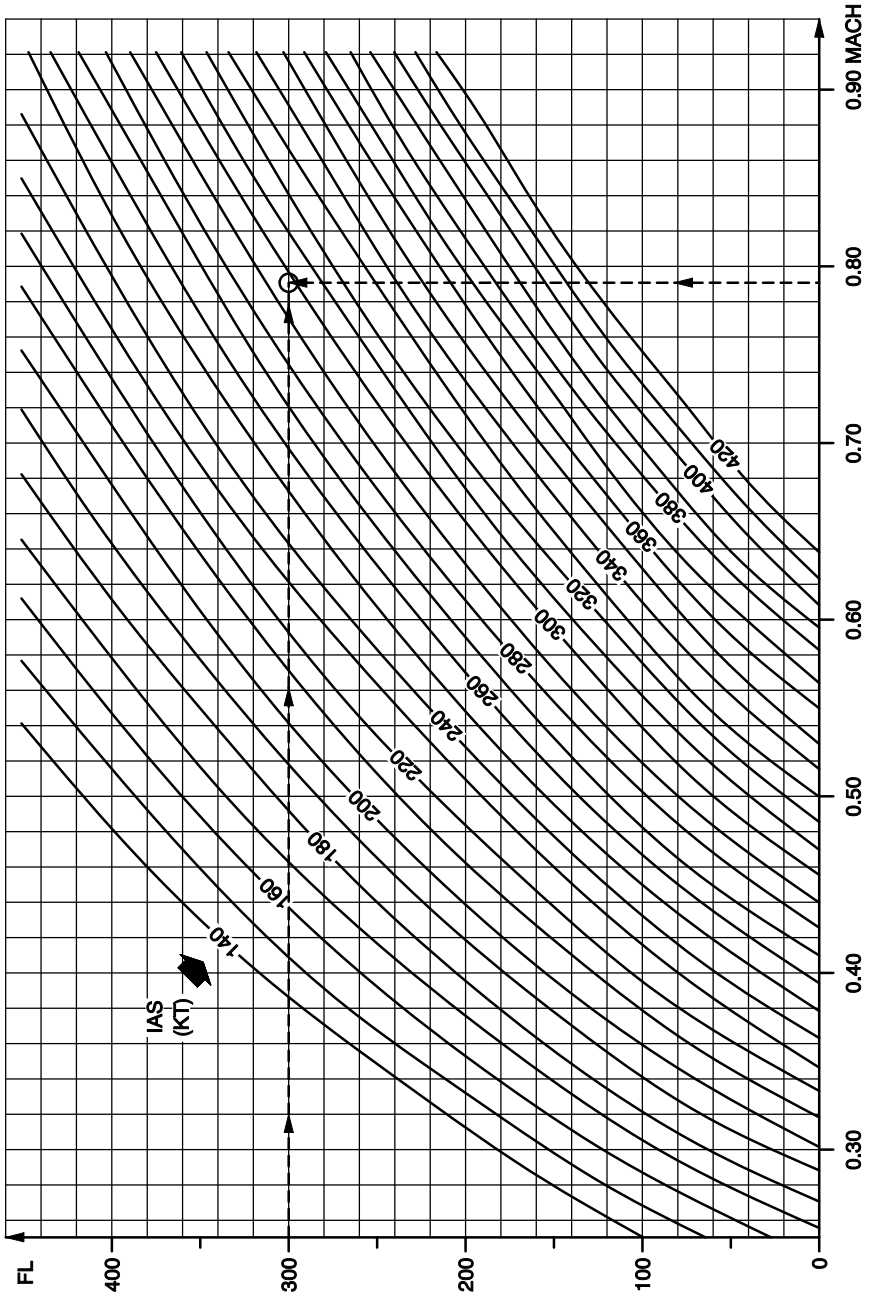
GROUND DISTANCE / AIR DISTANCE CONVERSION



IAS / MACH CONVERSION



ISA TEMPERATURE AND PRESSURE ALTITUDE CORRECTION

ISA Temperature

Airport Elevation (ft)	ISA Temp. (°C)
15 000	–14.7
14 000	–12.7
13 000	–10.8
12 000	–8.8
11 000	–6.8
10 000	–4.8
9 000	–2.8
8 000	–0.8
7 000	+1.1
6 000	+3.1
5 000	+5.1
4 000	+7.1
3 000	+9.1
2 000	+11.0
1 000	+13.0
0	+15.0
–1 000	+17.0
–2 000	+19.0

Example:

Airport Elevation = 1000 ft
OAT = 23°C

– With the table above, determine the ISA Temperature corresponding to the **Airport Elevation:**
→ **ISA Temp = +13°C**

– To obtain the Delta ISA Temperature, subtract the **ISA Temp** above from the **Outside Air Temperature (OAT)**
→ **Delta ISA Temp = +10°C**

Pressure Altitude Correction

QNH (hPa)	CORRECTION (ft)	QNH (in Hg)
949 – 951	+1 900	28.01 – 28.10
952 – 955	+1 800	28.11 – 28.20
956 – 958	+1 700	28.21 – 28.30
959 – 961	+1 600	28.31 – 28.40
962 – 964	+1 500	28.41 – 28.45
965 – 968	+1 400	28.46 – 28.56
969 – 971	+1 300	28.57 – 28.67
972 – 974	+1 200	28.68 – 28.77
975 – 978	+1 100	28.78 – 28.86
979 – 981	+1 000	28.87 – 28.95
982 – 984	+900	28.96 – 29.05
985 – 988	+800	29.06 – 29.15
989 – 991	+700	29.16 – 29.25
992 – 994	+600	29.26 – 29.35
995 – 997	+500	29.36 – 29.45
998 – 1 001	+400	29.46 – 29.54
1 002 – 1 004	+300	29.55 – 29.64
1 005 – 1 007	+200	29.65 – 29.74
1 008 – 1 011	+100	29.75 – 29.84
1 012 – 1 014	0	29.85 – 29.94
1 015 – 1 018	–100	29.95 – 30.04
1 019 – 1 021	–200	30.05 – 30.14
1 022 – 1 025	–300	30.15 – 30.24
1 026 – 1 028	–400	30.25 – 30.34
1 029 – 1 031	–500	30.35 – 30.44
1 032 – 1 035	–600	30.45 – 30.54
1 036 – 1 038	–700	30.55 – 30.65
1 039 – 1 042	–800	30.66 – 30.75
1 043 – 1 045	–900	30.76 – 30.85
1 046 – 1 050	–1 000	30.86 – 30.95

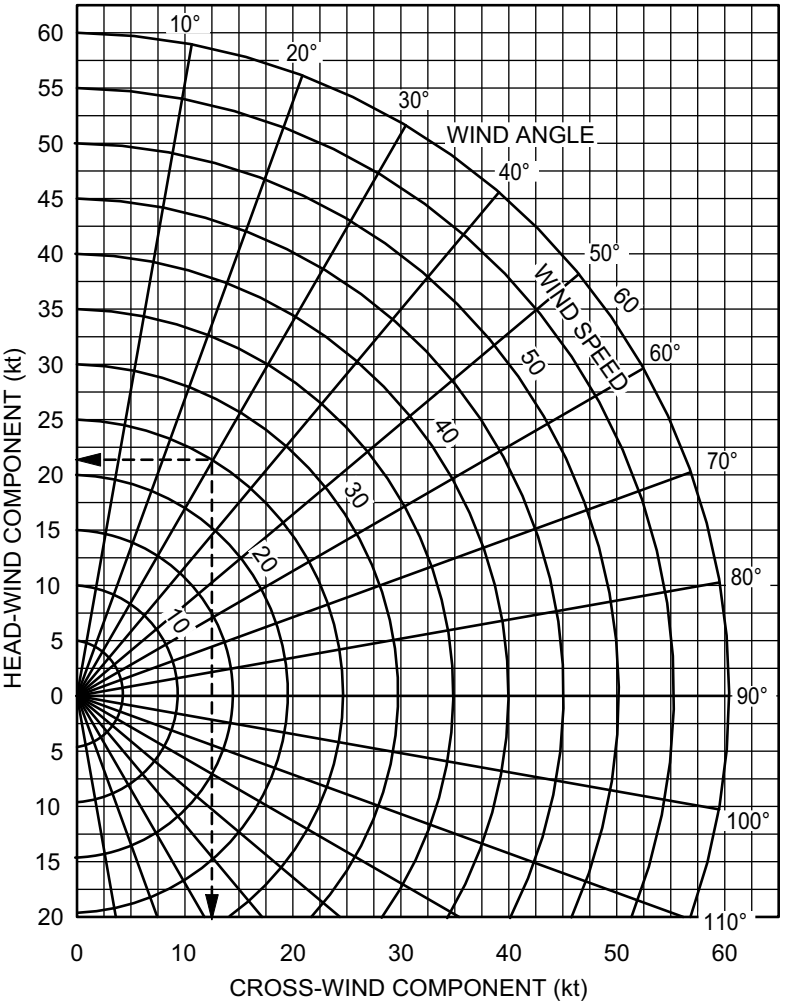
Example:

Airport Elevation = 1000 ft
QNH = 996 hPa (29.41 in Hg)

– With the table above, determine the Pressure Altitude Correction for the current **QNH:**
→ **Pressure Altitude Correction = +500 ft**

– To obtain the Airport Pressure Altitude, add the **Pressure Altitude Correction** above to the **Airport Elevation:**
→ **Airport Pressure Altitude = 1500 ft**

WIND COMPONENT



OPS-OPS Operational Data

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AIRCRAFT CONFIGURATION SUMMARY

For awareness and for the specified aircraft, the following table provides the flight crew with a list of optional aircraft systems and functions related to aircraft flight operations.

H2

System	Item	CAE UK	CAE DK

H3

ENG	Variant	CFM / IAE	CFM / IAE
AUTO FLT	AP/FD TCAS	-	-
AUTO FLT	**AP Auto-disconnect at…**	**MAPt**	**MAPt**
AUTO FLT	**Auto FD Engagement at Go-Around**	**Yes**	**Yes**
AUTO FLT	**Auto NAV Engaged (Armed) at Go-Around**	**Yes**	**Yes**
AUTO FLT	**Backup Navigation (on MCDU)**	**Yes**	**Yes**
AUTO FLT	Descent Profile Optimization (DPO)	-	-
AUTO FLT	FLS (FMS Landing System)	-	-
AUTO FLT	**FMS2 Release 1A**	**Yes**	**Yes**
AUTO FLT	GLS	-	-
AUTO FLT	MLS	-	-
AUTO FLT	**RNP AR**	**Yes (0.1)**	**Yes (0.1)**
DATALINK	CPDLC	-	-
EIS	**Metric Altitude Indications on the PFD**	**Yes**	**Yes**

H4

GEAR	Brake FANS	Yes	Yes

H5

GEAR	NWS Yellow HYD + ABCU	Yes	Yes
NAV	**BUSS**	**Yes**	**Yes**
NAV	**GPS**	**Yes**	**Yes**
NAV	**GPS PRIMARY Function**	**Yes**	**Yes**
NAV	QFE BARO Setting	-	-

H6

SURV	Multiscan WXR	Yes	No
SURV	**PWS**	**Yes**	**Yes**
SURV	ADS-B OUT	-	-
SURV	RAAS	-	-
SURV	ROW/ROPS	-	-
ENG	Derated Takeoff	-	-
ENG	Soft Go-Around Function	-	-

OPERATING SPEEDS

OPERATING SPEEDS (KT) CG ≥ 25 %					
Weight (1000 KG)	**F**	**S**	**Green dot FL < 200(1)**	**VLS CONF 3**	**VREF**
40	117	152	165	110	106
44	122	159	173	115	111
48	128	166	181	120	116
52	133	173	189	125	121
56	138	179	197	130	125
60	143	185	205	135	130
64	148	192	213	139	134
68	152	197	221	143	138
72	157	203	229	147	142
76	161	209	237	151	146
78	163	211	241	153	148

(1) *Above FL 200 add 1 kt per additional 1 000 ft.*

For CG < 25 % add 2 kt to VLS and VREF

USE OF FUEL PENALTY FACTOR TABLES

USE OF THE FUEL PENALTY FACTORS

The Fuel Penalty Factors provided in the following tables are conservative values, given as a guideline in order to increase the crew awareness and to help the decision making.

Note: *In case of failure impacting the fuel consumption, the fuel predictions provided by the FMS are no longer reliable (except in One Engine Inoperative OEI condition). The flight crew must still compute and monitor the actual fuel consumption.*

Refer to the following tables in order to assess the impact of the failure on the fuel consumption after any ECAM alert that:

- Displays the line INCREASED FUEL CONSUMP or FUEL CONSUMPT INCRSD in the STATUS SD PAGE, or
- Displays Flight Control Surfaces in the INOP SYS, or
- Impacts the Landing Gears or Landing Gear Doors retraction (when extended).

The Fuel Penalty Factors given in these tables have been calculated taking into account:

- The FUEL CRITICAL INOP SYS, and
- The aircraft configuration, speed or altitude described in the CONDITIONS column.

Ensure that all these conditions are well met before applying the corresponding Fuel Penalty Factor.

METHODOLOGY

The methodology is the following:

- Check the **ECAM ALERT table** to determine if a Fuel Penalty Factor is applicable depending on the CONDITIONS column, then
- Check the **INOP SYS table** in order to determine if, according to the actual aircraft status, there is a Fuel Penalty Factor applicable depending on the CONDITIONS column
- If only one Fuel Penalty Factor (FPF) is applicable:
  TRIP FUEL PENALTY = (FOB - EFOB at DEST) x FPF
  The FMS fuel predictions must be recomputed to take into account this trip fuel penalty.
- If two or more Fuel Penalty Factors (FPF) are applicable:
  TRIP FUEL PENALTY = (FOB - EFOB at DEST) x (FPF1 + FPF2 +...)
  The FMS fuel predictions must be recomputed to take into account this trip fuel penalty.

Note: *Due to previous failures in flight or dispatch under MEL, some failures could have an impact on the fuel consumption:*
- *Without being mentioned in the ECAM ALERT table (only through INOP SYS table), or*
- *If mentioned in the ECAM ALERT table, with additional INOP SYS (other than the one(s) described in the FUEL CRITICAL INOP SYS column for this specific ECAM alert) impacting also the fuel consumption.*

Example:

- Dispatch with the ELAC 1 inoperative under MEL
- HYD G SYS LO PR ECAM caution in flight
- These two failures lead to the loss of the left aileron
- INOP SYS will displayed "L AIL"

If the Fuel Penalty Factor of the HYD G SYS LO PR ECAM alert is applicable (spoiler extended), sum the corresponding factor with the Fuel Penalty Factor related to the INOP SYS "L(R) AIL" partially extended.
FPF (HYD G SYS LO PR) = 10 %
FPF (INOP SYS: L AIL) = 8 %
Therefore, TRIP FUEL PENALTY = (FOB - EFOB at DEST) x (10 % + 8 %)

Continued on the next page

USE OF FUEL PENALTY FACTOR TABLES (CONT'D)

If the Fuel Penalty Factor of the HYD G SYS LO PR ECAM alert is not applicable (spoiler remains retracted), apply the Fuel Penalty Factor related to the INOP SYS "L(R) AIL" partially extended.
Therefore, TRIP FUEL PENALTY = (FOB - EFOB at DEST) x 8 %

FUEL PENALTY FACTORS/ECAM ALERT TABLE

FUEL PENALTY FACTORS/ECAM ALERT TABLE

SYS	ECAM ALERT	FUEL CRITICAL INOP SYS	CONDITIONS	FUEL PENALTY FACTOR
ELEC	AC BUS 1 FAULT (equivalent to B SYS LO PR)	SPLR 3	If L(R) spoiler 3 is indicated extended (at the time of the failure)	10 %
	DC ESS BUS FAULT (equivalent to B SYS LO PR)	SPLR 3	If L(R) spoiler 3 is indicated extended (at the time of the failure)	10 %
F/CTL	L(R) AIL FAULT	L(R) AIL	If one aileron is indicated fully extended (upwards or downwards)	27 %
		L(R) AIL or L+R AIL	If one or both aileron(s) is/are indicated partially extended	8 %
	SPLR FAULT	SPLR (affected)	If one spoiler is suspected fully extended(2) **Cruise Conditions:** **OPT SPEED..... GDOT +10KT** Whenever possible, target green dot speed +10 kt to minimize fuel consumption. However, if buffet is encountered at GDOT speed +10 kt increase speed to fly out of buffet condition. **CRUISE ALT.....AS REQUIRED** Current Flight Level (FL) may not be maintained due to increased drag. Maintain a cruise FL as high as possible.	55 %
			If one spoiler or one pair of spoilers is partially extended (zero hinge moment)	10 %
		SPLR 3 with BLUE HYD	If spoiler 3 is partially extended after the loss of the B hydraulic system(1)	Up to 4 %
		SPLR 1 or 5 with GREEN HYD	If spoiler 1 or 5 is partially extended after the loss of the G hydraulic system(1)	Up to 9 % (3)
		SPLR 2 or 4 with YELLOW HYD	If spoiler 2 or 4 is partially extended after the loss of the Y hydraulic system(1)	Up to 9 % (3)
	FLAPS FAULT/LOCKED	FLAPS	If Flaps are extended	80 %
	SLATS FAULT/LOCKED	SLATS	If Slats are extended	60 %
	SLATS + FLAPS FAULT/LOCKED	SLATS+FLAPS	If Slats and Flaps are extended	100 %

Continued on the next page

FUEL PENALTY FACTORS/ECAM ALERT TABLE				
SYS	**ECAM ALERT**	**FUEL CRITICAL INOP SYS**	**CONDITIONS**	**FUEL PENALTY FACTOR**
HYD	B SYS LO PR	SPLR 3	If L(R) spoiler 3 is indicated extended (at the time of the failure)	10 %
	G SYS LO PR	SPLR 1+5	If L(R) spoiler 5 is indicated extended (at the time of the failure)	10 %
	Y SYS LO PR	SPLR 2+4	If L(R) spoilers 2 and 4 are indicated extended (at the time of the failure)	20 %
	G+B SYS LO PR	L+R AIL SPLR 1+3+5 L ELEV	Both ailerons are failed Spoilers 1, 3 and 5(1) Left elevator is failed RAT is extended	10 % to 15 % (4)
	G+Y SYS LO PR	SPLR 1+2+4+5 STABILIZER	Stabilizer is jammed Spoilers 1, 2, 4 and 5(1)	0 % to 10 % (4)
	B+Y SYS LO PR	SPLR 2+3+4 R ELEV	Spoilers 2, 3 and 4(1) Right elevator is failed RAT extended	3 % to 10 % (4)
L/G	SHOCK ABSORBER FAULT	L/G RETRACT	All landing gears are extended (Also refer to PRO-SPO-25-10)	180 %
	GEAR NOT UPLOCKED			
	BOGIE ALIGN FAULT (option)			
	GEAR UPLOCK FAULT			
	DOORS NOT CLOSED	L/G DOOR	All landing gears doors are extended	15 %

(1) During the flight, the spoiler(s) may gradually extend and increase(s) the fuel consumption.

(2) A spoiler can be suspected fully extended (runaway) if high roll rate has been experienced immediately after the failure, associated with a possible AP disconnection. A visual inspection, if time permits, can also confirm the full extension of the spoiler.

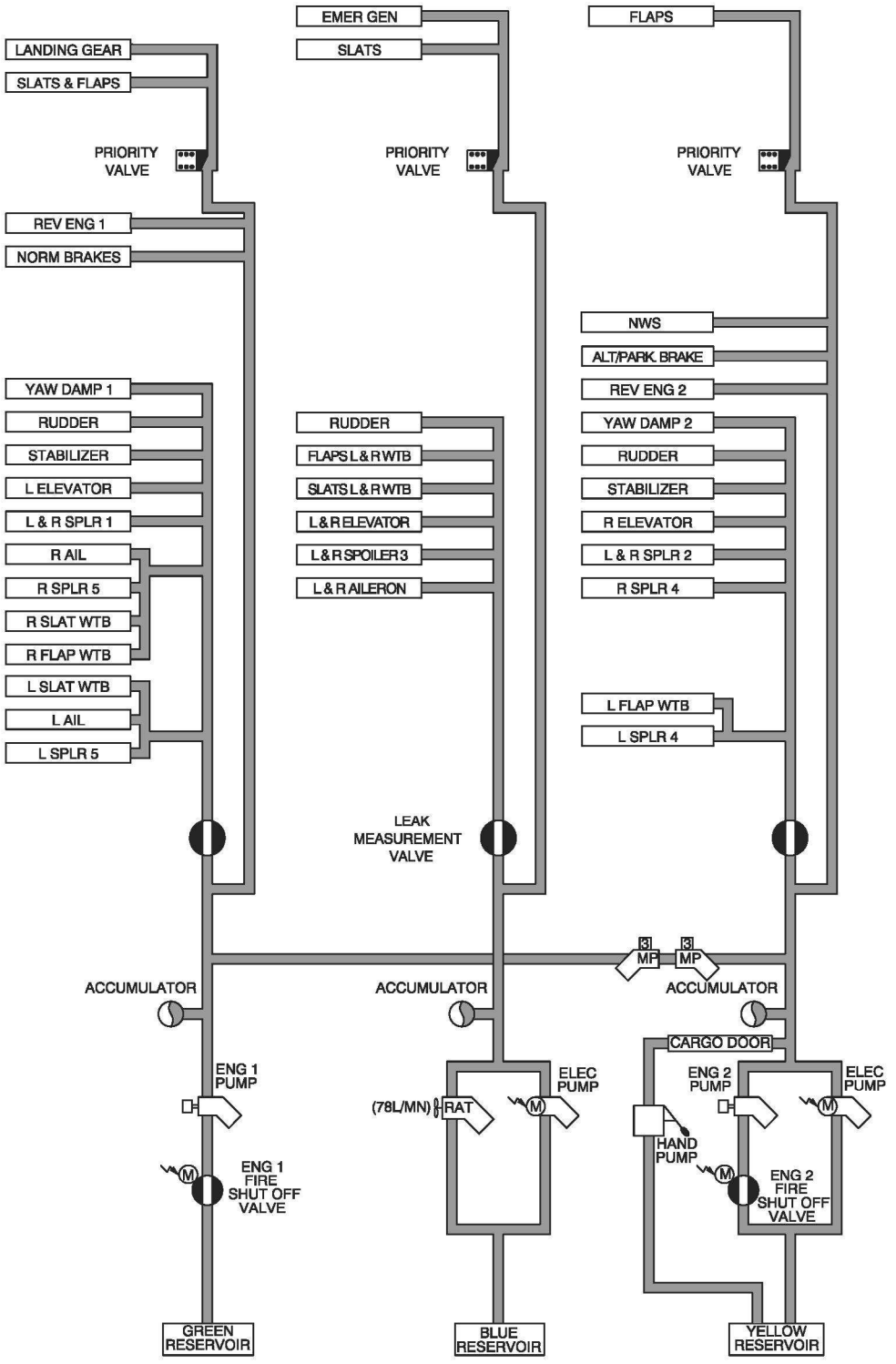
(3) The maximum value of the Fuel Penalty Factor provided in the table considers that the two pairs of corresponding spoilers gradually extend during the flight.

(4) The minimum value of the Fuel Penalty Factor provided in the table considers that all spoilers remain retracted. The maximum value has been calculated considering that all impacted spoilers gradually extend during the flight.

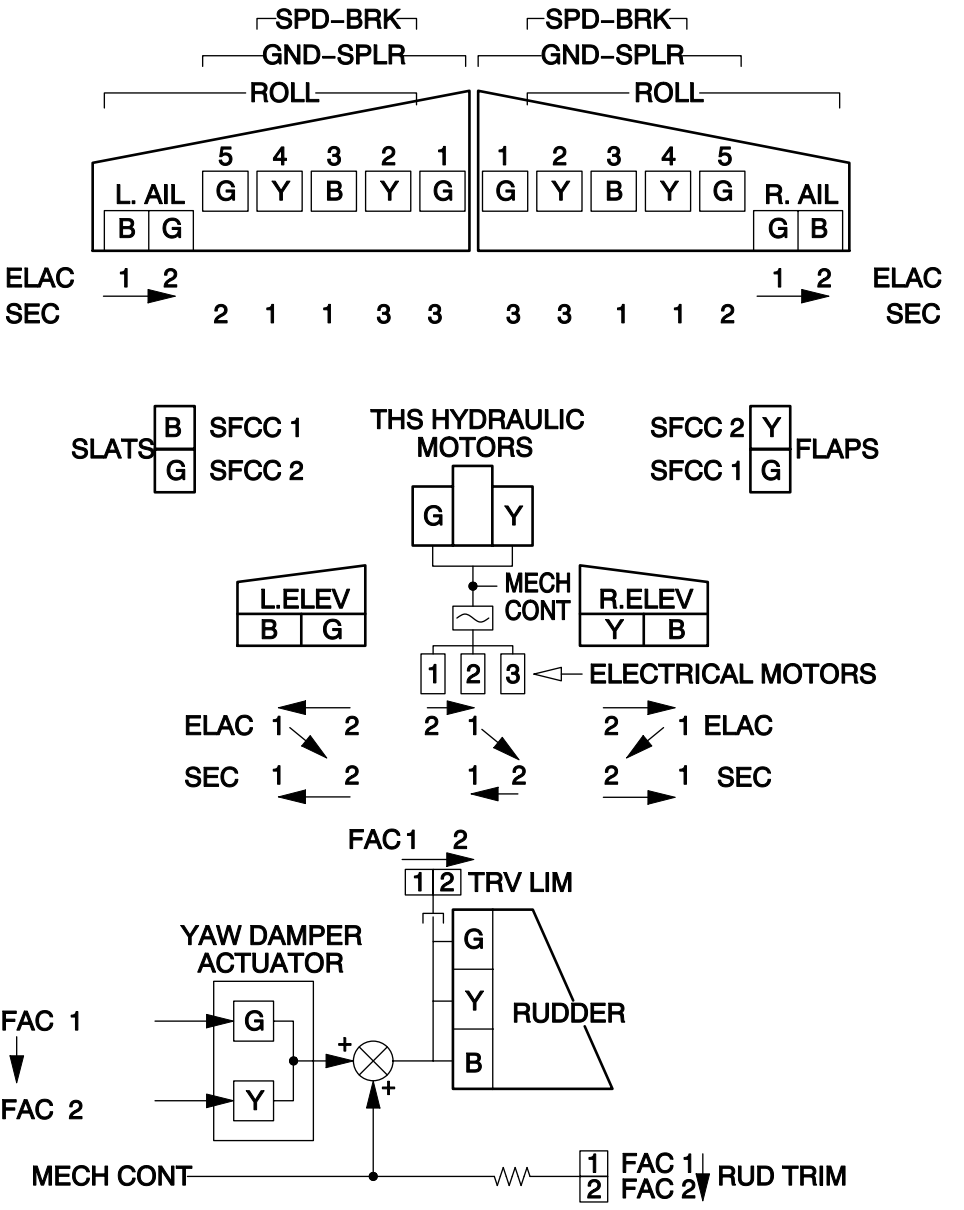
FUEL PENALTY FACTORS/INOP SYS TABLE

FUEL PENALTY FACTORS/INOP SYS TABLE			
SYS	**INOP SYS**	**CONDITIONS**	**FUEL PENALTY FACTOR**
F/CTL	L(R) AIL or L+R AIL	If one or both aileron(s) is/are indicated partially extended	8 %
	FLAPS	If Flaps are extended	80 %
	SLATS	If Slats are extended	60 %
	SLATS+FLAPS	If Slats and Flaps are extended	100 %
L/G	L/G DOOR	All landing gears doors are extended	15 %

HYDRAULIC ARCHITECTURE



FLIGHT CONTROLS ARCHITECTURE



→ Arrows indicate the control reconfiguration priorities

G B Y indicates the hydraulic power source for each servo control

REQUIRED EQUIPMENT FOR CAT2 AND CAT3

	FMA CAPABILITY → / EQUIPMENT ↓	CAT 2	CAT 3 SINGLE	CAT 3 DUAL
FMGS MONITORED FOR FMA LDG CAPABILITY	AP	1 AP ENGAGED	1 AP ENGAGED	2 AP ENGAGED
	AUTOTHRUST	0	1	1
	FMA	1	2	2
	A/THR CAUTION	0	1	1
	ELECTRICAL SUPPLY SPLIT	0	0	1
	FAC	1	1	2
	ELAC	1	1	2
	YAW DAMPER/RUDDER TRIM	1/1	1/1	2/2
	HYDRAULIC CIRCUIT	2	2	3
	PFD	2	2	2
	FLIGHT WARNING COMPUTER	1	1	2
	BSCU CHANNEL	1(1)	1(1)	1
	ANTISKID	1(1)	1(1)	1
	NOSEWHEEL STEERING	1(1)	1(1)	1
	RADIO ALTIMETER	1 (displayed on both sides)	2	2
	ILS RECEIVER	2	2	2
	BEAM EXCESSIVE DEVIATION WARNING	1 for PM	2	2
	ATTITUDE INDICATION ON PFD	2	2	2
	ADR/IR	2/2	2/2	3/3
NOT FMGS MONITORED FOR FMA LDG CAPABILITY	AP DISCONNECT PB	2	2	2
	"AP OFF" ECAM WARNING	1	1	2
	"AUTOLAND" LIGHT	1	1	1
	RUDDER TRAVEL LIMIT SYSTEM	1 required for autoland with crosswind higher than 12 kt		
	WINDSHIELD HEAT (L or R windshield)	1 for PF		
	WINDSHIELD WIPERS OR RAIN REPELLENT (if activated)	1 for PF		
	ND	1	2	2
	AUTO CALLOUT FUNCTION	one is required for autoland	1	1
	ATTITUDE INDICATION (STBY)	1	1	1
	DH INDICATION	1 for PM		

(1) For automatic rollout, one is required. For autoland without automatic rollout, none is required.

Note:
- *Flight crews are not expected to check the equipment list before approach. When an ECAM or local caution occurs, the crew should use the list to confirm the landing capability.*
- *On ground, the equipment list determines which approach category the aircraft will be able to perform at the next landing.*
- *Electrical power supply split : This ensures that each FMGC is powered by an independent electrical source (AC and DC).*
- *Failure of antiskid and/or nosewheel steering mechanical parts are not monitored for landing capability.*
- *The DH will be displayed on the FMA, and the ˝Hundred Above˝ and ˝Minimum˝ auto callouts will be announced, provided that the DH value has been entered on the MCDU.*

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OEB41 Issue 1.0
ERRONEOUS ALTERNATE FUEL PREDICTIONS UPON MODIFICATION OF A COMPANY ROUTE IN THE ALTERNATE FLIGHT PLAN

Approved by: Head of Flight Operations Support and Services

- This OEB covers a significant operational issue. Non-compliance with this OEB could have a significant impact on the safe operations of the aircraft. The Operators shall distribute its content to all flight crews without delay. An extract of this OEB is provided for insertion in the QRH.
- It is strongly recommended that all Operators accelerate the incorporation of all corrective Service Bulletins as soon as they are available.

Reason for issue: This OEB replaces the A320 OEB 204.
This OEB is issued to inform the operators of the following: Erroneous alternate (ALTN) fuel predictions are experienced when the flight crew modifies a company route (CO RTE) previously inserted in the alternate Flight Plan (F-PLN).
This OEB provides an explanation and operational recommendations in case of erroneous ALTN fuel predictions.

Applicable to: Aircraft with Honeywell FMGC Release 1A "H2" (MOD 38778, Airbus SB A320 22-1269 and MOD 38779, Airbus SB A320 22-1270)

Cancelled by: Refer to the "Cancelled by" section of the associated FCOM OEB.

Note: The interchangeability code, given in the Illustrated Part Catalog (IPC), indicates the conditions for interchangeability of equipment. After installation of corrective modification(s)/SB(s), if an Operator reinstalls any equipment affected by this OEB, it is the Operator's responsibility to ensure that the recommendations given in this OEB are applied again for the applicable aircraft.

Operations Engineering Bulletins are issued by Airbus as the need arises to quickly transmit technical and procedural information. They are distributed to all FCOM holders and to others who need advice of changes to operational information.
Information in this bulletin is recommended by Airbus but may not be approved by Airworthiness Authorities. If the procedures contained in this OEB differ from the procedures in the AFM, the AFM remains the reference.

ERRONEOUS ALTERNATE FUEL PREDICTIONS UPON MODIFICATION OF A COMPANY ROUTE IN THE ALTERNATE FLIGHT PLAN

ECAM ENTRY

None

PROCEDURE

This OEB PROC N°41 is issued to provide flight crews with the following recommendations:
This procedure only applies when a CO RTE is used for ALTN F-PLN. In the case of ALTN fuel predictions erroneously set to zero further to a modification of this ALTN F-PLN:

ENTER manually a waypoint in the en-route F-PLN (neither in the departure, nor in the arrival), to start a new computation of ALTN fuel predictions

Maintain or delete the entered waypoint at convenience

Check the ALTN fuel predictions are correct

OEB46 Issue 1.0
NO ENGAGEMENT OF GUIDANCE MODE

Approved by: Head of Airbus Flight Operations & Training Support

- This OEB covers a significant operational issue. Non-compliance with this OEB could have a significant impact on the safe operations of the aircraft. The Operators shall distribute its content to all flight crews without delay. An extract of this OEB is provided for insertion in the QRH.
- It is strongly recommended that all Operators accelerate the incorporation of all corrective Service Bulletins as soon as they are available.

Reason for issue: The objective of this OEB is to highlight that in the event of an erroneous Radio Altimeter (RA) height indication, guidance modes may not engage as expected.

Applicable to: All A318/A319/A320/A321 aircraft equipped with the ELAC L97 standard (or subsequent ELAC standards).

Cancelled by: FG C14 or FG PC14 or FG I15 or FG PI13 standards.

Note: The interchangeability code, given in the Illustrated Part Catalog (IPC), indicates the conditions for interchangeability of equipment. After installation of corrective modification(s)/SB(s), if an Operator reinstalls any equipment affected by this OEB, it is the Operator's responsibility to ensure that the recommendations given in this OEB are applied again for the applicable aircraft.

Operations Engineering Bulletins are issued by Airbus as the need arises to quickly transmit technical and procedural information. They are distributed to all FCOM holders and to others who need advice of changes to operational information.
Information in this bulletin is recommended by Airbus but may not be approved by Airworthiness Authorities. If the procedures contained in this OEB differ from the procedures in the AFM, the AFM remains the reference.

NO ENGAGEMENT OF GUIDANCE MODE

ECAM ENTRY

None

PROCEDURE

This bulletin is issued to remind operators of the possible consequences of an erroneous Radio Altimeter (RA) height indication. As listed in the OEB 46, if a RA transmits an erroneous height indication, this may have effects on the auto flight system depending on the flight phase.
This OEB PROC is issued to provide flight crews with the following recommendations:

■ **During go-around**

● **If SRS and GA TRK modes remain engaged and other guidance modes cannot be selected or engaged as expected:**

Note: - *At the thrust reduction altitude, LVR CLB will not be displayed on the FMA,*
- *ALT* and ALT will not engage at the FCU altitude.*

Disconnect APs.

Set both FDs to OFF then ON. FDs revert to basic modes (HDG - V/S).

Re-engage guidance modes as appropriate.

■ **For the approach that follows the go-around:**
Do not arm the G/S mode.

Flight crews must report, in the technical logbook, any of the consequences of an erroneous RA height listed in the OEB N°46.

RED OEB – RED OEB – RED OEB – RED OEB – RED OEB – RED OEB – RED OEB – RED OEB

OEB48 Issue 2.0
ABNORMAL V ALPHA PROT

H7

Approved by: Head of Flight Operations and Training Support

- This OEB covers a significant operational issue. Non-compliance with this OEB could have a significant impact on the safe operations of the aircraft. The Operators shall distribute its content to all flight crews without delay. An extract of this OEB is provided for insertion in the QRH.
- It is strongly recommended that all Operators accelerate the incorporation of all corrective Service Bulletins as soon as they are available.

Reason for issue:

Issue2:
This OEB is reissued in order to provide the cancellation criteria.
Issue 1:
An Airbus aircraft encountered a blockage of two Angle Of Attack (AOA) probes during climb. With the Mach number increasing, the blockage led to the activation of the alpha protection.

Applicable to: All A318/A319/A320/A321 aircraft.

Cancelled by: Refer to the "Cancelled by" section of the associated FCOM OEB.

Note: The interchangeability code, given in the Illustrated Part Catalog (IPC), indicates the conditions for interchangeability of equipment. After installation of corrective modification(s)/SB(s), if an Operator reinstalls any equipment affected by this OEB, it is the Operator's responsibility to ensure that the recommendations given in this OEB are applied again for the applicable aircraft.

Operations Engineering Bulletins are issued by Airbus as the need arises to quickly transmit technical and procedural information. They are distributed to all FCOM holders and to others who need advice of changes to operational information.
Information in this bulletin is recommended by Airbus but may not be approved by Airworthiness Authorities. If the procedures contained in this OEB differ from the procedures in the AFM, the AFM remains the reference.

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ABNORMAL V ALPHA PROT

H8

ECAM ENTRY

None

PROCEDURE

CAUTION	Monitor the Alpha Prot strip and the Alpha max strip when they are visible.

- **AT ANY TIME, with a speed above VLS, if the aircraft goes to a CONTINUOUS NOSE DOWN PITCH RATE that cannot be stopped with backward sidestick inputs, IMMEDIATELY APPLY:**

  ONE ADR ..... KEEP ON

  TWO ADRs ..... OFF

- **If the Alpha Max strip (red) completely hides the Alpha Prot strip (black and amber) in a stabilized wings-level flight path (without an increase in load factor):**

  ONE ADR ..... KEEP ON

  TWO ADRs ..... OFF

CAUTION	RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)

  FPV USE ..... CONSIDER

- **If the Alpha Prot strip (black and amber) rapidly moves by more than 30 kt during flight maneuvers (with an increase in load factor), with AP ON and speed brakes retracted:**

  ONE ADR ..... KEEP ON

  TWO ADRs ..... OFF

CAUTION	RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)

  FPV USE ..... CONSIDER

****** END OF RED OEB48 ISSUE 2.0 ******

RED OEB – RED OEB – RED OEB – RED OEB – RED OEB – RED OEB – RED OEB – RED OEB

OEB54 Issue 1.0
INCORRECT FAC WEIGHT DUE TO DASHED CG ON FUEL PRED PAGE - APPROVAL

H9

Approved by: Head of Flight Operations and Training Standards

- This OEB covers a significant operational issue. Non-compliance with this OEB could have a significant impact on the safe operations of the aircraft. The Operators shall distribute its content to all flight crews without delay. An extract of this OEB is provided for insertion in the QRH.
- It is strongly recommended that all Operators accelerate the incorporation of all corrective Service Bulletins as soon as they are available.

Reason for issue: This OEB is issued to provide a procedure in case both FMS display dashed CG on the FUEL PRED page.

Applicable to: This OEB is applicable to following aircraft fitted with Thales FMS and FAC standard previous to CAA06:

- A318
- A319/A320/A321ceo fitted with sharklets
- A320neo family
- A319/A320/A321ceo with SB 22-1229 that activates the characteristic speeds computation based on FMS data.

Cancelled by: Refer to the "Cancelled by" section of the associated FCOM OEB.

Note: The interchangeability code, given in the Illustrated Part Catalog (IPC), indicates the conditions for interchangeability of equipment. After installation of corrective modification(s)/SB(s), if an Operator reinstalls any equipment affected by this OEB, it is the Operator's responsibility to ensure that the recommendations given in this OEB are applied again for the applicable aircraft.

Operations Engineering Bulletins are issued by Airbus as the need arises to quickly transmit technical and procedural information. They are distributed to all FCOM holders and to others who need advice of changes to operational information.
Information in this bulletin is recommended by Airbus but may not be approved by Airworthiness Authorities. If the procedures contained in this OEB differ from the procedures in the AFM, the AFM remains the reference.

H10

INCORRECT FAC WEIGHT DUE TO DASHED CG ON FUEL PRED PAGE - PROCEDURE

ECAM ENTRY

None

PROCEDURE

This procedure must be performed on ground only.
The GW CG value must be displayed at least on one FMS to resume normal operations.

AFTER ENGINE START (AT LEAST ONE ENGINE)

CG on FUEL PRED page (FMS1 or 2) .....CHECK
Check that FMS1 or 2 FUEL PRED page displays a GW CG value.

- **If GW CG dashed:**
  ZFWCG value.....ENTER/RE-ENTER
  CG on FUEL PRED page (after 5 s).....CHECK
  - **If GW CG field remains dashed on both FMS:**
    MAINTENANCE ACTION IS DUE

****** END OF RED OEB54 ISSUE 1.0 ******

EMERGENCY CHECKLIST

EMERGENCY CHECKLISTS

EMER LANDING
ALL ENG FAILURE

Apply the following if not able to maintain altitude after the loss of thrust near the ground.

DITCHING	FORCED LANDING
APU ..... START	APU ..... START
LANDING GEAR ..... UP	
FLAPS LEVER 2	FLAPS LEVER 2
VAPP ..... DETERMINE	VAPP ..... DETERMINE

GW	40 t	50 t	60 t	70 t	80 t	90 t	95 t
VAPP	150 kt	150 kt	163 kt	173 kt	183 kt	193 kt	198 kt

DITCHING pb ..... ON	SPLRS ..... ARM
	At 1 000 ft AGL at the latest:
	LANDING GEAR ..... DOWN by GRVTY
At 500 ft AGL or below:	**At 500 ft AGL or below:**
BRACE FOR IMPACT ..... ORDER	BRACE FOR IMPACT ..... ORDER
For flare:	**For flare:**
TOUCH DOWN AT MIN V/S	TOUCH DOWN AT MIN V/S
TARGET PITCH ATT 11 °	
At touchdown:	**At touchdown:**
ALL ENG MASTERS ..... OFF	ALL ENG MASTERS ..... OFF
APU MASTER SW ..... OFF	APU MASTER SW ..... OFF
EMER EVAC PROC ..... APPLY	EMER EVAC PROC ..... APPLY

EMER EVAC

AIRCRAFT / PARKING BRK .....STOP / ON

ATC (VHF 1) .....NOTIFY

CABIN CREW (PA) ..... ALERT

ΔP (only if MAN CAB PR has been used).....
..... CHECK ZERO

● **If ΔP not at zero:**

CAB PR MODE SEL .....MAN

V/S CTL.....FULL UP

ALL ENG MASTERS.....OFF

ALL FIRE pb (ENGs & APU).....PUSH

ALL AGENTS (ENGs & APU) ..... AS RQRD

■ **If evacuation required:**

EVACUATION.....INITIATE

■ **If evacuation not required:**

CABIN CREW AND PASSENGERS (PA).....NOTIFY

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BEFORE START

COCKPIT PREP ..... COMPLETED (BOTH)
GEAR PINS and COVERS ..... REMOVED
SIGNS ..... ON/AUTO
FUEL QUANTITY ..... ____KG
TO DATA ..... SET, V1, V2, FLEX
BARO REF ..... ____SET (BOTH)

WINDOWS/DOORS ..... CLOSED (BOTH)
BEACON ..... ON
THR LEVERS ..... IDLE
PARKING BRAKE ..... AS RQRD
MOBILE DEVICES ..... FLIGHT MODE / OFF

AFTER START

ANTI ICE ..... AS RQRD
ECAM STATUS ..... CHECKED
TRIM ..... ____% (MAC), ____° (RUD)

BEFORE TAKEOFF

FLIGHT CONTROLS ..... CHECKED (BOTH)
FLAP SETTING ..... CONF____(BOTH)
BRIEFING and PERF .....
..... ____(RWY) CONFIRMED
ECAM MEMO ..... TO NO BLUE (BOTH)
- *AUTO BRK MAX*
- *SIGNS ON*
- *CABIN READY ( )*
- *SPLRS ARM*
- *FLAPS TO*
- *TO CONFIG NORM*

TAKEOFF RWY ..... ____CONFIRMED (BOTH)
PACKS ..... AS RQRD

LANDING

ECAM MEMO ..... LDG NO BLUE
- *LDG GEAR DN*
- *SIGNS ON*
- *CABIN READY ( )*
- *SPLRS ARM*
- *FLAPS SET*

A/THR ..... SPEED/OFF

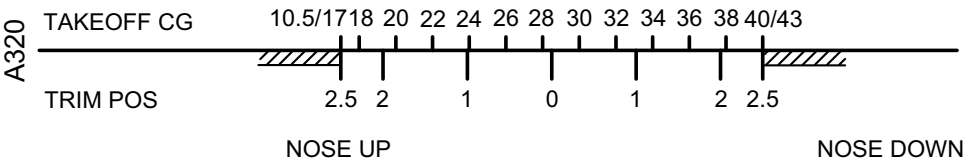
PARKING

RADAR and PWS ..... OFF
ENGINES ..... OFF
SEAT BELTS ..... OFF
EXT LT ..... AS RQRD
FUEL PUMPS ..... OFF
PARK BRK and CHOCKS ..... AS RQRD
MOBILE DEVICES ..... AS RQRD
Consider HEAVY RAIN

SECURING THE AIRCRAFT

ADIRS ..... OFF
OXYGEN ..... OFF
APU BLEED ..... OFF
EMER EXIT LT ..... OFF
SIGNS ..... OFF
APU AND BAT ..... OFF
Consider COLD WEATHER

TAKEOFF CG/TRIM POS



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